PERFORMER

Digital Partyline

CR-4 • CR-2 • C3 • CD-2
CW-2 • C31 • C44 / C44plus

User Manual

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1 SAFETY INSTRUCTIONS

Please carefully read the following information before using or installing any digital partyline device.

All external powered devices, such as Master Stations, System Interface / Splitter should only be used with the three pole power cable provided and when connected to a grounded power source. Do not place any heavy or sharp-edged objects on either the power or data cables.

No device has any controls or user serviceable parts inside. The housing should only be opened by trained service personnel.

Place no containers with liquid on the equipment. Should liquid penetrate the housing, immediately unplug the unit and have it inspected by an authorized service technician.

Do not expose the devices to extreme humidity or dust.

If the equipment is brought from a cold to a warm environment, condensation may form inside the unit. In this case, wait at least 6 hours before connecting the power cable to an electrical outlet.

In order to prevent interruptions of the digital audio signal, keep the cable length as short as possible. Make sure that all connectors are securely attached. Poorly secured connectors lead to static in the digital audio system and can also cause a reset of the entire partyline.

If a large number of devices are operated on a single partyline, a large drop in voltage may occur, depending on the ohm resistance of the cable used. In this case, the voltage can be boosted with the addition of other powering devices, such as C31+PSU / CR-4 / CR-2.

Information contained in this manual is subject to change without notice.

2 GENERAL

Thank you for purchasing this Riedel product.

In order to make the installation and use of this product as simple as possible, we have compiled the following user manual.

2.1 Performer CR-4 / CR-2 Master Station

The Performer master stations CR-4 (4-channel) and CR-2 (2-channel) are the ideal choice for setting up a stand-alone digital partyline system. Depending on the set-up the integrated power supply of the 19”/1RU device can power up to 32 beltpacks.

The color-illuminated buttons are ideal for applications in operational environments. The remote microphone kill function allows the user to silence any open microphone on the intercom channels. The CR-4/CR-2 features an additional program input that can be routed individually to each of the intercom channels. Other features include individual listen volume controls for all partylines, Call and GPI, PGM IN and a stage announce function to use the inter-com microphone to talk over a PA system. The CR-4/CR-2 can be operated using a headset or the integrated powerful loudspeaker and a gooseneck microphone.

2.2 Performer CD-2 Desktop Speaker / Headset Station

The Performer desktop speaker / headset station CD-2 (2-channel) provides the same features set as the CR-2 master station except for the internal power supply. This makes the CD-2 ideal either for operation as a desktop speaker station or – in combination with an external power supply – as a 2-channel master station for setting up a stand-alone digital partyline system.

The color-illuminated buttons are ideal for applications in operational environments. The remote microphone kill function allows the user to silence any open microphone on the intercom channels. The CD-2 features an additional program input that can be routed individually to each of the intercom channels. Other features include individual listen volume controls for all partylines, Call and GPI, PGM IN and a stage announce function to use the intercom microphone to talk over a PA system.

2.3 Performer C3 Digital Beltpack

The Performer C3 is an ergonomically shaped, fully digital 2-channel beltpack that includes all the standard features from conventional analogue party line systems including daisy-chaining. The beltpack uses high quality digital audio providing noise-free and hum-free signals. Extensive DSP signal processing provides perfect side tone-nulling and excellent intelligibility in applications with very high ambient noise levels. The C3 has three XLR connectors, one for headset, one for signal input and one for signal loop through, which can also be used as an additional analogue program input.

Operation is extremely convenient. Two large rotary level controls on the top of the C3 adjust the listen volumes for CH-A and CH-B. Pushing on the A or B volume control toggles talk on/off with momentary/latching operation to the respective channel and includes talk LED

indication. The C3 is easy to configure and also features a call send button. A bright call light indicates an incoming call to all daisy-chained Performer devices.

2.4 Performer CW-2 Digital Wall Mount Speaker / Headset Station

The CW-2 Wall Mount Speaker / Headset station comes with a standard 4-gang outlet box and provides an easy-to-use 2-channel digital intercom panel. The large rotary level controls combine volume control and a talk button with momentary / latching operation. The unit can be operated using a headset or the integrated powerful loudspeaker and a microphone. A call signal LED, Call and S-Call function complete the feature list. The CW-2 can be powered from the partyline or via a local power supply.

2.5 Performer C31 Split Box

The C31 Split Box splits one signal input on 3-pole female XLR onto three 3-pole male XLR outputs. The C31 can be powered by the partyline or with an external power supply for extra long cable runs. The use of an external power supply extends the possible length of a partyline to a maximum of 2.5 km (1.5 miles).

2.6 Performer C44/C44plus System Interface

The C44/C44plus System Interface allows for seamless integration of digital partylines in matrix intercom environments. The 19“/1RU unit converts four two-channel CAT5 matrix ports to four phantom powered partylines. The partyline devices such as beltpacks are connected to the C44/C44plus via standard 3-pole XLR cables. Up to 16 beltpacks can be daisy-chained on each line. One C44/C44plus can power up to 38 beltpacks.

For stand-alone use the device features an integrated 24x24 port digital intercom matrix, which can be configured via Riedel’s audio assignment software. Pre-programmed configurations can be loaded via the DIP-switches on the front.

Full digital interfacing is provided for Artist and Performer 32 matrix systems. The AES / analog 4-wire I/Os and GPIs are provided for interfacing to third party intercom systems. For example, the analog input can also function as a PGM input.

The C44/C44plus provides individual short-circuit protection on each powered line. Separate DC inputs and outputs at the rear of the unit can be used to provide redundant power.

3 PERFORMER CR-4 / CR-2 MASTER STATION

With the Performer master stations CR-4 (4-channel) and CR-2 (2-channel) it is easy to set up a stand-alone digital partyline system. Depending on the set-up the integrated power supply of the 19”/1RU device can power up to 32 beltpacks.

Note: As the two Master Stations CR-4 and CR-2 are identical in their operation, this chapter focuses on the CR-4 user elements and connectors only. Differences to the CR-2 are clearly marked.

3.1 Getting Started

Mount the optional MIC 30 microphone to the microphone connector at the front of the unit. For headset mode, connect an appropriate headset to one of the headset connectors. Choose the headset microphone type with the DIP switch 5 on the back of the unit.

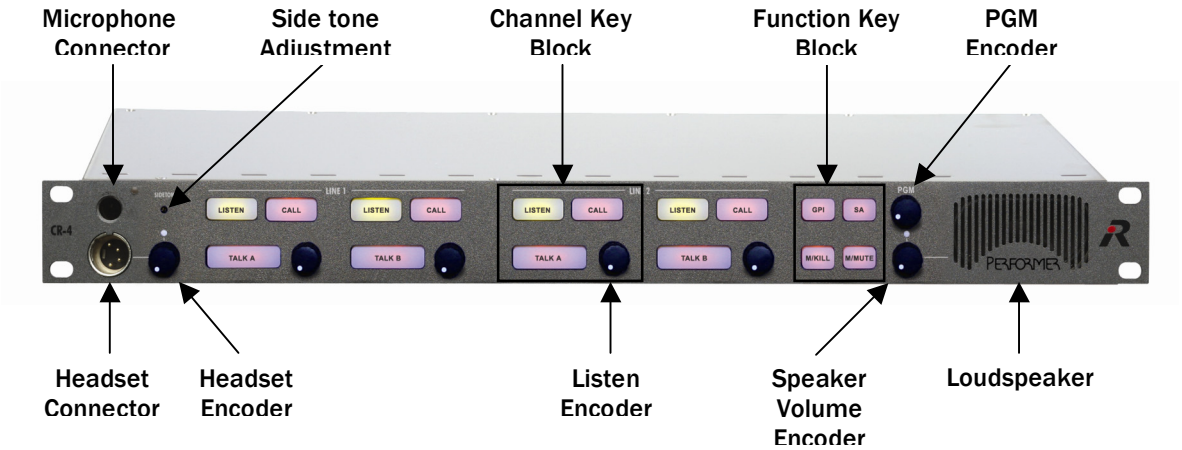
Now start building your partyline by connecting the next partyline device to one of the downstream ports (CR-2 has only one downstream / upstream port) with 3-pole XLR cable.

Finally connect the Master Station with the provided power cable to the power. The system will switch on immediately and is ready to use once the blue TALK key (channel A) goes out.

Note: In a complex system, turn on remote power supplies (such as C31 + PSU) first, before switching on the master station.

3.2 User Elements Front

The picture below shows a CR-4 master station.



3.2.1 Microphone Connector

The microphone connector is Riedel's standard 6.3mm microphone connector for electret microphones, such as MIC 30 / MIC 3. Turn the microphone clockwise to attach the microphone to the unit.

3.2.2 Headset Connector

The headset connector is 4-pole male XLR and supports headsets with electret (~ 4.5V) or dynamic microphones, depending on the DIP switch setting.

Setting	
DIP SW 5 ON	Electret
DIP SW 5 OFF	Dynamic

3.2.3 Headset Knob (2 Functions)

Volume Control

The headset rotary encoder adjusts the volume (0-100%) of the headset speaker. Turn the encoder clockwise to increase and counterclockwise to decrease the volume. The volume is MUTED when the encoder is turned counterclockwise as far as it will go.

Headset Microphone ON / OFF

Pushing the rotary encoder switches between gooseneck and headset microphone.

Note: Selecting the headset microphone does not automatically mute the panel speaker!

Selection	LED
Headset Microphone	Green 100%, ON
Gooseneck (default mode)	0%, OFF

3.2.4 SIDE TONE Adjustment Headsets

The side tone of the headset can be adjusted by the screw trim. Turn the screw clockwise to increase the side tone and counterclockwise to decrease it. The side tone is OFF when the screw is turned counterclockwise as far as it will go.

Note: The side tone is only active when either the TALK or the SA (stage announcement key (function key block) is active. The side tone is never routed to the loudspeaker.

3.2.5 LISTEN (Latching)

An active LISTEN key (channel key block) enables listening to the related digital partyline channel. If the LISTEN key is deactivated, the LISTEN function of the related partyline is muted.

Note: The LISTEN function can also be switched ON / OFF by the LISTEN encoder.

Function	LISTEN Key
LISTEN ON (default mode)	Green 100%
LISTEN OFF	Green 10%

3.2.6 LISTEN Knob (2 Functions)

Volume Control

The listen rotary encoder (channel key block) adjusts the LISTEN volume (0-100%) of the related DPL channel. Turn the encoder clockwise to increase and counterclockwise to decrease the volume. The LISTEN volume is MUTED when the encoder is turned counterclockwise as far as it will go.

LISTEN On / Off

Pushing the rotary encoder (channel key block) switches the LISTEN ON / OFF (0 / 100%). This function works parallel to the LISTEN key.

3.2.7 TALK A/B (Auto / Momentary)

An active TALK key (channel key block) enables talking to the related digital partyline channel. The TALK key can be set to auto (short press=latching, long press=momentary) or momentary using DIP switch 1 for channel A and DIP switch 2 for channel B on the back of the unit.

Note: If the unit is in mute mode (M/MUTE key active, function key block), talking on a channel is not possible. Formerly active or pre-selected TALK keys are indicted by a slow flashing TALK key.

Power Failure Indication

A blue TALK key on channel A indicates a short-circuit / overload on the related partyline.

Function	TALK Key
TALK ON	Red 100%
TALK OFF (default mode)	Red 10%
TALK ON but MUTED	Red 100% slow flashing
TALK OFF and MUTED	Red 10%
DPL Power Failure (TALK A)	Blue 100%, Red 0%

3.2.8 CALL (2 Functions)

Light Call (Momentary)

A flashing CALL key (channel key block) indicates an incoming call on the related digital partyline channel. Activate the LISTEN key and turn on the volume to listen to the channel.

To send a light call, press the CALL key of the DPL channel you wish to call.

Signalization	CALL Key
Incoming CALL	Yellow 100% flashing
Outgoing CALL	Yellow 100%
Inactive CALL (default mode)	Yellow 10%

Light Call (Momentary) with GPI Out Relay

A flashing CALL key (channel key block) indicates an incoming call on the related digital partyline channel and automatically closes the corresponding GPI Out relay of the unit (→ prerequisite).

Pressing the CALL key sends an outgoing call and closes the GPI Out relay contacts of the corresponding partyline channels (e.g. for an external call light indication).

Note: The GPI Out relay contact of a unit closes only if the corresponding DIP switches of the unit are set (→ prerequisite).

Signalization	CALL Key
Incoming CALL	Yellow 100% flashing
Outgoing CALL + GPI Out	Yellow 100%
Inactive CALL (default mode)	Yellow 10%

Settings	
DIP SW 6 ON	CH A ready for GPI Out
DIP SW 7 ON	CH B ready for GPI Out
DIP SW 8 OFF	GPI Out by CALL

3.2.9 GPI (Momentary)

Activating the GPI key (function key block) closes all GPI Out relay contacts (local & partyline) associated with the active (TALK = ON) digital partyline channels.

Note: The GPI Out relay contact of a unit closes onl, if the related DIP switches of this unit are set (→ prerequisite).

Selection	GPI Key
GPI active	Yellow 100%
GPI inactive (default mode)	Yellow 10%

Settings	
DIP SW 6 ON	CH A ready for GPI Out
DIP SW 7 ON	CH B ready for GPI Out
DIP SW 8 ON	GPI Out by GPI

3.2.10 M/Kill (Momentary)

Activating M/KILL (function key block) mutes all microphones on the active (TALK = ON) digital partyline channels. The microphone of the local CR-4 stays active.

Note: Disable the M/KILL function with the related DIP 3 switch.

Setting	M/Kill Key
M/KILL active	Red 100%, 1,5 seconds
M/KILL inactive (default mode)	Red 10%
M/KILL OFF – inactive	Red 10%
M/KILL OFF – active	Red 100%, 1,5 seconds

Setting	
DIP SW 3 OFF	M/KILL mode enabled

3.2.11 SA Stage Announcement (Momentary)

With an active SA (function key block) the microphone signal is routed to the SA output (local 4W) and the related GPI Out relay contact closes (→ Pin Out D-Sub).

Selection	SA Key
SA active	Yellow 100%
SA inactive	Yellow 10%

3.2.12 M/MUTE (Latching)

Activating M/MUTE (function key block) mutes all active TALKS of the unit.

While M/MUTE is active, TALKS can be pre-selected / deselected by pressing the related TALK key. A pre-selcted but muted TALK key flashes slowly.

Note: The microphone of the CR-4 stays active for the stage announcement SA (local 4W).

Selection	M/MUTE Key
M/MUTE active	Red 100%
M/MUTE inactive	Red 10%
	TALK Key
"Active" TALK key - muted	Red 100% slow flashing
"Inactive" TALK key - muted	Red 10%

3.2.13 PGM Level Control

The PGM (program) rotary encoder adjusts the listen volume (0-100%) of the PGM input (local 4W) of the unit. Turn the encoder clockwise to increase and counterclockwise to decrease the volume of the program input. The PGM volume is MUTED when the encoder is turned counterclockwise as far as it will go.

Adjust the PGM level input with the screw-adjustment of the back of the unit.

This PGM input is not routed to the partylines!

Note: Pushing the rotary encoder currently has no function (for future optional use).

3.2.14 Speaker Volume Knob (2 Functions)

Speaker Volume

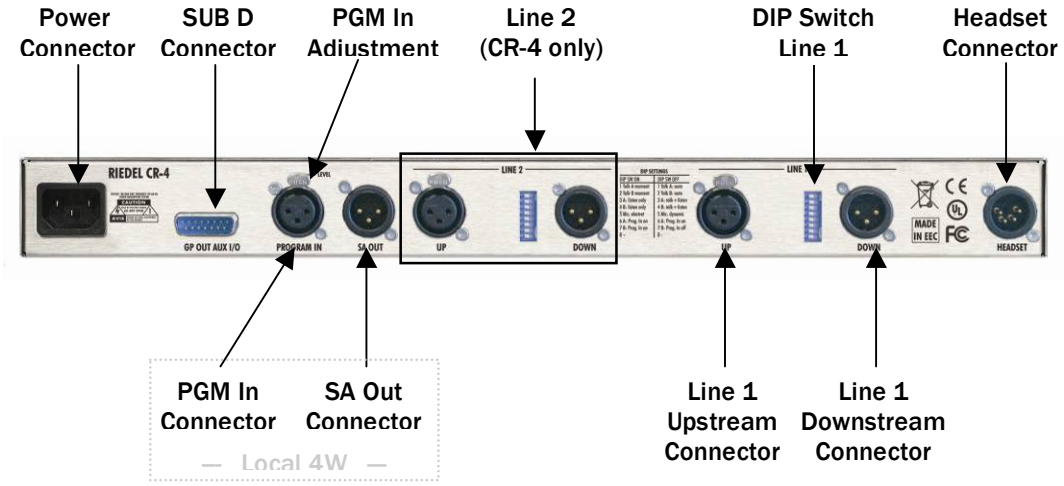
The speaker volume rotary encoder adjusts the speaker volume of the unit (0-100%). Turn the encoder clockwise to increase the volume of the speaker and counterclockwise to decrease the volume of the speaker. The speaker is MUTED when the encoder is turned counterclockwise as far as it will go.

Quick Speaker Mute (Momentary)

Pushing and holding the rotary encoder temporarily mutes the audio level (0%).

Note: The speaker volume functions as the master level control. Use the individual channel level controls of the unit to mix the audio channels. Use the speaker volume control to adjust the volume of this mix.

3.3 User Elements Rear



3.3.1 Power Connector

Standard power connector for 110-220 VAC.

3.3.2 SUB D 15 Connector

The Sub D 15 connector hosts the AUX audio in- and outputs (system 4-wire) as well as all GPI out contacts.

PIN		PIN	
1	AUX In +		
2	GND	9	AUX In –
3	Aux Out +	10	AUX Out –
4	GPI Out 1 (Line 2 CH A)	11	GPI Out 1 (Line 2 CH A)
5	GPI Out 2 (Line 2 CH B)	12	GPI Out 2 (Line 2 CH B)
6	GPI Out 3 (Line 1 CH A)	13	GPI Out 3 (Line 1 CH A)
7	GPI Out 4 (Line 1 CH B)	14	GPI Out 4 (Line 1 CH B)
8	GPI Out SA	15	GPI Out SA

AUXILIARY IN / OUT

If DIP switch 6 (for CH A) and / or DIP switch 7 (for CH B) is in the ON position, the auxiliary audio (system 4-wire) is permanently routed to the related digital partyline channel.

SA GPI out Relay

The stage announcement SA GPI out closes when the SA key is pressed.

GPI out Relay

The channel auxiliary GPI of the corresponding partyline closes when the GPI key is pressed AND the DIP switch 6 / 7 is in position ON.

3.3.3 PGM IN Connector

3-pole female XLR connector - Symmetric analog audio input (local 4-wire) for e.g. local program input (PGM).

Level adjustment with screw trim right next to it. Turn the screw clockwise to increase the level and counterclockwise to decrease it.

3.3.4 SA OUT Connector

3-pole male XLR connector - Symmetric analog audio output (local 4-wire) for e.g. stage announcement (SA)

3.3.5 Upstream Connector

3-pole female XLR connector - Digital data stream FROM the party line (female), not powered by unit. Use this connector to connect upstream devices when the CR-4 / CR-2 is used within a system.

3.3.6 Downstream Connector

3-pole male XLR connector - Digital data stream TO the party line (male), powered by the unit. Use this connector to start your partyline or to daisy chain an existing partyline.

3.3.7 Headset XLR Connector

4-pole male XLR connector - Connection for an additional (second) headset

3.3.8 DIP Switch CR-4 / CR-2

SW	OFF	ON	
1	Auto	momentary	Momentary changeover / latched for TALK A. In the 'Off' position, a short push on TALK A will switch the microphone signal on channel A ON, a second push switches it OFF again. A longer push in OFF mode will be regarded as momentary. SW-1 in ON mode, TALK A is only active as long as the button is pressed.
2	Auto	momentary	Momentary changeover / latched for TALK B.
3	M/Kill enabled	M/Kill disabled	Disables the M/Kill function of the unit
4	Talk & listen	B listen only	TALK B is disabled
5	Dynamic	Electret	Microphone type headset
6	AUX disabled	AUX enabled	AUX IN / OUT routed to digital party line channel A
7	AUX disabled	AUX enabled	AUX IN / OUT routed to digital party line channel B
8	GPI out by CALL	GPI out by GPI	The GPI out relay is triggered either by CALL or GPI, depending on the SW setting.

3.4 Specifications

Electrical Properties	Values
Audio bandwidth:	50 Hz – 20 kHz
Audio bandwidth (DPL):	50 Hz – 10 kHz
Resolution:	16 bit
Microphone Preamp:	
Mic input impedance	1.6 kOhm
Dynamic mic input level	-52 dBu
Electret mic input level	-38 dBu
Frequency response	80 Hz to 12 kHz, ± 3 dB
Headphone Amplifier:	
Load impedance	24 to 600 Ohms
Max. output level	16 Volts peak-to-peak
Max. output power	160 mW @ 200 Ohms
Frequency response	80 Hz to 12 kHz, ± 3 dB
Signal-to-noise-ratio	> 82 dB (A)
Power Supply:	
Output voltage	+48V DC
Output current	2 A max. total
Short circuit protection	per individual line
Short circuit reset time	500 ms
Power requirements	85 – 265 V AC / 47 – 63 Hz
Power consumption	120 VA (CR-4) / 85 VA (CR-2)
Dimensions:	
H x W x D	44 (1 RU) x 483 x 190 mm
Mass	

4 PERFORMER CD-2 DESKTOP SPK/HS STATION

The Performer CD-2 desktop / speaker station can be easily integrated in an existing digital partyline setup with its loop trough connectors. It does not require additional power as it is powered over the line.

The Performer CD-2 desktop / speaker station (optional power supply required) can also be used as an master station to set up a stand-alone digital partyline system. Depending on the set-up the optional external power supply can power up to 32 beltpacks.

4.1 Getting Started

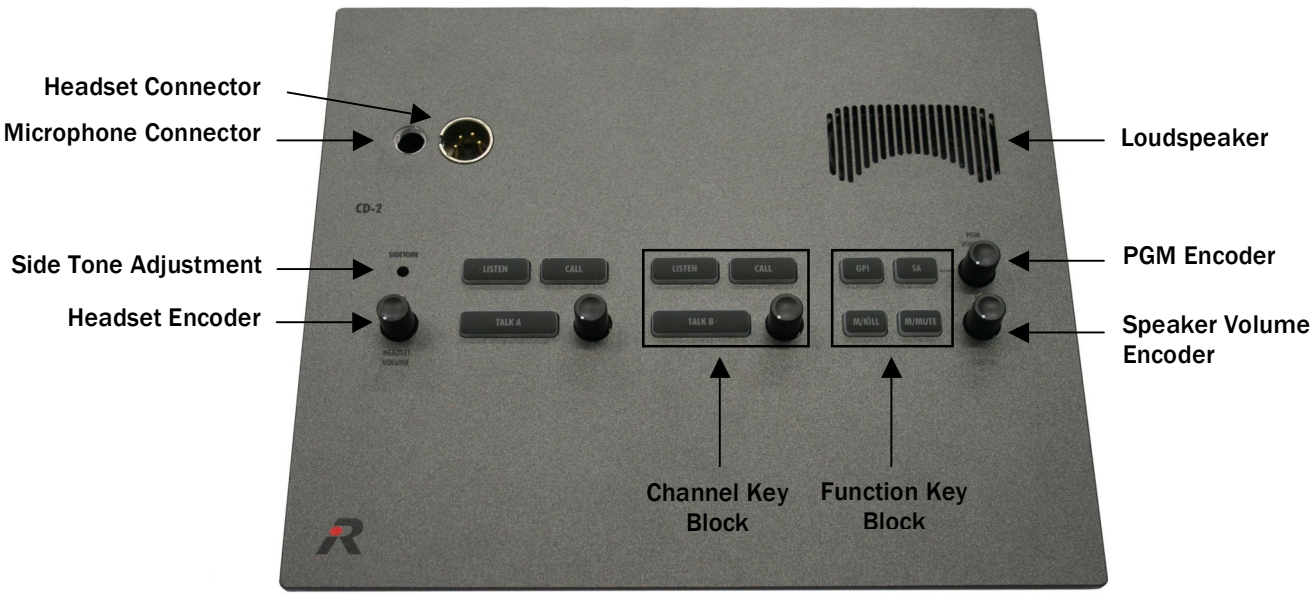
Mount the MIC 30 microphone (optional) to the microphone connector at the front of the unit. For headset mode, connect an appropriate headset to one of the headset connectors. Choose the headset microphone type with the DIP switch 5 on the back of the unit.

Now start to integrate the CD-2 in your partyline system by connecting the 3-pole XLR cable to the up-stream port. To loop through the signal, connect the next partyline device to the downstream port with another 3-pole XLR cable.

When the up-stream port is connected to a powered line, the system will switch on immediately and is ready to use once the blue TALK key (channel A) goes out.

Note: To use the CD-2 as a master station or in a complex system use the optional power supply (C31 + PSU) to power the unit or to refresh the power.

4.2 User Elements Front



4.2.1 Microphone Connector

The microphone connector is Riedel's standard 6.3mm microphone connector for electret microphones, such as MIC 30 / MIC 3. Turn the microphone clockwise to attach the microphone to the unit.

4.2.2 Headset Connector

The headset connector is 4-pole male XLR and supports headsets with electret (~ 4.5V) or dynamic microphones, depending on the DIP switch setting.

Setting	
DIP SW 5 ON	Electret
DIP SW 5 OFF	Dynamic

4.2.3 Headset Knob (2 Functions)

Volume Control

The headset rotary encoder adjusts the volume (0-100%) of the headset speaker. Turn the encoder clockwise to increase and counterclockwise to decrease the volume. The volume is MUTED when the encoder is turned counterclockwise as far as it will go.

Headset Microphone ON / OFF

Pushing the rotary encoder switches between gooseneck and headset microphone.

Note: Selecting the headset microphone does not automatically mute the panel speaker!

Selection	LED
Headset Microphone	Green 100%, ON
Gooseneck (default mode)	0%, OFF

4.2.4 SIDE TONE Adjustment Headsets

The side tone of the headset can be adjusted by the screw trim. Turn the screw clockwise to increase the side tone and counterclockwise to decrease it. The side tone is OFF when the screw is turned counterclockwise as far as it will go.

Note: The side tone is only active when either the TALK or the SA (stage announcement key (function key block) is active. The side tone is never routed to the loudspeaker.

4.2.5 LISTEN (Latching)

An active LISTEN key (channel key block) enables listening to the related digital partyline channel. If the LISTEN key is deactivated, the LISTEN function of the related partyline is muted.

Note: The LISTEN function can also be switched ON / OFF by the LISTEN encoder.

Function	LISTEN Key
LISTEN ON (default mode)	Green 100%
LISTEN OFF	Green 10%

4.2.6 LISTEN Knob (2 Functions)

Volume Control

The listen rotary encoder (channel key block) adjusts the LISTEN volume (0-100%) of the related DPL channel. Turn the encoder clockwise to increase and counterclockwise to decrease the volume. The LISTEN volume is MUTED when the encoder is turned counterclockwise as far as it will go.

LISTEN On / Off

Pushing the rotary encoder (channel key block) switches the LISTEN ON / OFF (0 / 100%). This function works parallel to the LISTEN key.

4.2.7 TALK A/B (Auto / Momentary)

An active TALK key (channel key block) enables talking to the related digital partyline channel. The TALK key can be set to auto (short press=latching, long press=momentary) or momentary using DIP switch 1 for channel A and DIP switch 2 for channel B on the back of the unit.

Note: If the unit is in mute mode (M/MUTE key active, function key block), talking on a channel is not possible. Formerly active or pre-selected TALK keys are indicted by a slow flashing TALK key.

Power Failure Indication

A blue TALK key on channel A indicates a short-circuit / overload on the related partyline.

Function	TALK Key
TALK ON	Red 100%
TALK OFF (default mode)	Red 10%
TALK ON but MUTED	Red 100% slow flashing
TALK OFF and MUTED	Red 10%
DPL Power Failure (TALK A)	Blue 100%, Red 0%

4.2.8 CALL (2 Functions)

Light Call (Momentary)

A flashing CALL key (channel key block) indicates an incoming call on the related digital partyline channel. Activate the LISTEN key and turn on the volume to listen to the channel.

To send a light call, press the CALL key of the DPL channel you wish to call.

Signalization	CALL Key
Incoming CALL	Yellow 100% flashing
Outgoing CALL	Yellow 100%
Inactive CALL (default mode)	Yellow 10%

Light Call (Momentary) with GPI Out Relay

A flashing CALL key (channel key block) indicates an incoming call on the related digital partyline channel and automatically closes the corresponding GPI Out relay of the unit (→ prerequisite).

Pressing the CALL key sends an outgoing call and closes the GPI Out relay contacts of the corresponding partyline channels (e.g. for an external call light indication).

Note: The GPI Out relay contact of a unit closes only if the corresponding DIP switches of the unit are set (→ prerequisite).

Signalization	CALL Key
Incoming CALL	Yellow 100% flashing
Outgoing CALL + GPI Out	Yellow 100%
Inactive CALL (default mode)	Yellow 10%

Settings	
DIP SW 6 ON	CH A ready for GPI Out
DIP SW 7 ON	CH B ready for GPI Out
DIP SW 8 OFF	GPI Out by CALL

4.2.9 GPI (Momentary)

Activating the GPI key (function key block) closes all GPI Out relay contacts (local & partyline) associated with the active (TALK = ON) digital partyline channels.

Note: The GPI Out relay contact of a unit closes onl, if the related DIP switches of this unit are set (→ prerequisite).

Selection	GPI Key
GPI active	Yellow 100%
GPI inactive (default mode)	Yellow 10%

Settings	
DIP SW 6 ON	CH A ready for GPI Out
DIP SW 7 ON	CH B ready for GPI Out
DIP SW 8 ON	GPI Out by GPI

4.2.10 M/Kill (Momentary)

Activating M/KILL (function key block) mutes all microphones on the active (TALK = ON) digital partyline channels. The microphone of the local CD-2 stays active.

Note: Disable the M/KILL function with the related DIP 3 switch.

Setting	M/Kill Key
M/KILL active	Red 100%, 1,5 seconds
M/KILL inactive (default mode)	Red 10%
M/KILL OFF – inactive	Red 10%
M/KILL OFF – active	Red 100%, 1,5 seconds

Setting	
DIP SW 3 OFF	M/KILL mode enabled

4.2.11 SA Stage Announcement (Momentary)

With an active SA (function key block) the microphone signal is routed to the SA output (local 4W) and the related GPI Out relay contact closes (→ Pin Out D-Sub).

Selection	SA Key
SA active	Yellow 100%
SA inactive	Yellow 10%

4.2.12 M/MUTE (Latching)

Activating M/MUTE (function key block) mutes all active TALKS of the unit.

While M/MUTE is active, TALKS can be pre-selected / deselected by pressing the related TALK key. A pre-selcted but muted TALK key flashes slowly.

Note: The microphone of the CD-2 stays active for the stage announcement SA (local 4W).

Selection	M/MUTE Key
M/MUTE active	Red 100%
M/MUTE inactive	Red 10%
	TALK Key
"Active" TALK key - muted	Red 100% slow flashing
"Inactive" TALK key - muted	Red 10%

4.2.13 PGM Level Control

The PGM (program) rotary encoder adjusts the listen volume (0-100%) of the PGM input (local 4W) of the unit. Turn the encoder clockwise to increase and counterclockwise to decrease the volume of the program input. The PGM volume is MUTED when the encoder is turned counterclockwise as far as it will go.

Adjust the PGM level input with the screw-adjustment of the back of the unit.

This PGM input is not routed to the partylines!

Note: Pushing the rotary encoder currently has no function (for future optional use).

4.2.14 Speaker Volume Knob (2 Functions)

Speaker Volume

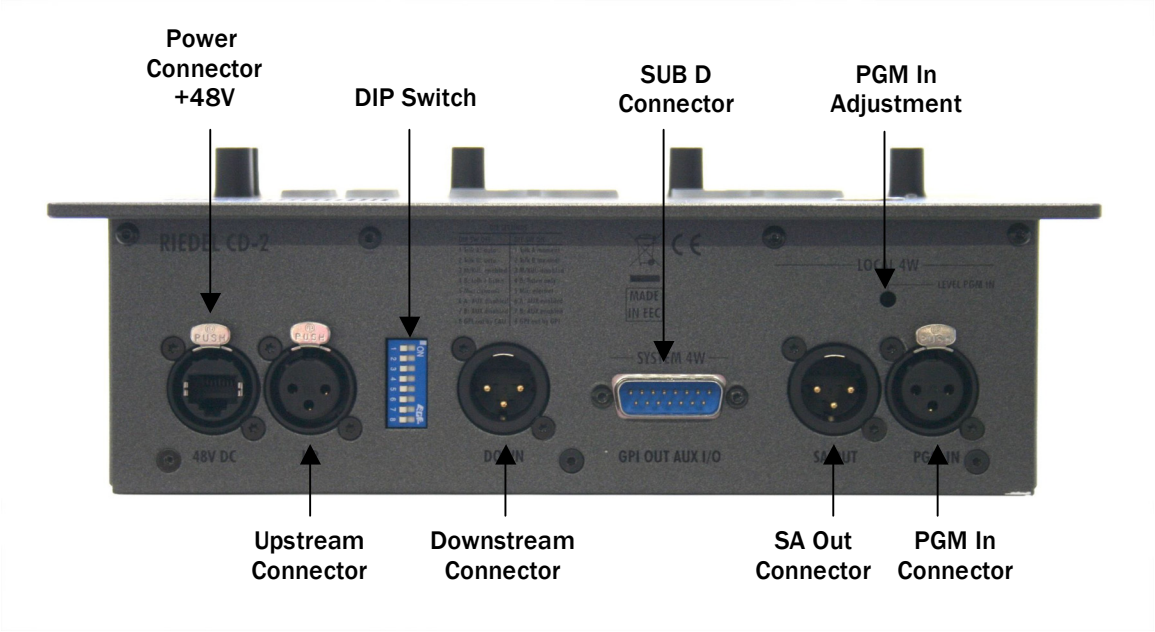
The speaker volume rotary encoder adjusts the speaker volume of the unit (0-100%). Turn the encoder clockwise to increase the volume of the speaker and counterclockwise to decrease the volume of the speaker. The speaker is MUTED when the encoder is turned counterclockwise as far as it will go.

Quick Speaker Mute (Momentary)

Pushing and holding the rotary encoder temporarily mutes the audio level (0%).

Note: The speaker volume functions as the master level control. Use the individual channel level controls of the unit to mix the audio channels. Use the speaker volume control to adjust the volume of this mix.

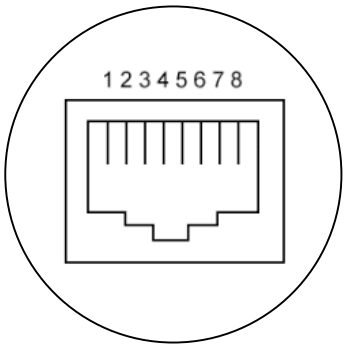
4.3 User Elements Rear



4.3.1 Power Connector

Connect to this connector the optional external power supply (+48V DC) for refreshing the power of the line or for using the CD-2 as an master station.

Pin Out DC ext. 48V



DC in RJ 45

Pin	Signal
1	
2	
3	
4	48V
5	48V
6	
7	GND
8	GND

4.3.2 SUB D 15 Connector

The Sub D 15 connector hosts the AUX audio in- and outputs (system 4-wire) as well as all GPI out contacts.

PIN		PIN	
1	AUX In +		
2	GND	9	AUX In –
3	Aux Out +	10	AUX Out –
4	GPI Out 1 (Line 2 CH A)	11	GPI Out 1 (Line 2 CH A)
5	GPI Out 2 (Line 2 CH B)	12	GPI Out 2 (Line 2 CH B)
6	Empty	13	Empty
7	Empty	14	Empty
8	GPI Out SA	15	GPI Out SA

AUXILIARY IN / OUT

If DIP switch 6 (for CH A) and / or DIP switch 7 (for CH B) is in the ON position, the auxiliary audio (system 4-wire) is permanently routed to the related digital partyline channel.

SA GPI out Relay

The stage announcement SA GPI out closes when the SA key is pressed.

GPI out Relay

The channel auxiliary GPI of the corresponding partyline closes when the GPI key is pressed AND the DIP switch 6 / 7 is in position ON.

Note: An adapter snake cable to 3 pole XLR 3 is optional available (Adapter Cable CR-2)

4.3.3 PGM IN Connector

3-pole female XLR connector - Symmetric analog audio input (local 4-wire) for e.g. local program input (PGM).

Level adjustment with screw trim right next to it. Turn the screw clockwise to increase the level and counterclockwise to decrease it.

4.3.4 SA OUT Connector

3-pole male XLR connector - Symmetric analog audio output (local 4-wire) for e.g. stage announcement (SA)

4.3.5 Upstream Connector

3-pole female XLR connector - Digital data stream FROM the party line (female), not powered by unit. Use this connector to connect upstream devices when the CD-2 is used within a system.

4.3.6 Downstream Connector

3-pole male XLR connector - Digital data stream TO the party line (male), optional powered when CD-2 is connected to external power supply. Use this connector to start your partyline or to daisy chain an existing partyline.

4.3.7 Headset XLR Connector

4-pole male XLR connector - Connection for an additional (second) headset

4.3.8 DIP Switch CD-2

SW	OFF	ON	
1	Auto	momentary	Momentary changeover / latched for TALK A. In the 'Off' position, a short push on TALK A will switch the microphone signal on channel A ON, a second push switches it OFF again. A longer push in OFF mode will be regarded as momentary. SW-1 in ON mode, TALK A is only active as long as the button is pressed.
2	Auto	momentary	Momentary changeover / latched for TALK B.
3	M/Kill enabled	M/Kill disabled	Disables the M/Kill function of the unit
4	Talk & listen	B listen only	TALK B is disabled
5	Dynamic	Electret	Microphone type headset
6	AUX disabled	AUX enabled	AUX IN / OUT routed to digital party line channel A
7	AUX disabled	AUX enabled	AUX IN / OUT routed to digital party line channel B
8	GPI out by CALL	GPI out by GPI	The GPI out relay is triggered either by CALL or GPI, depending on the SW setting.

4.4 Specifications

Electrical Properties	Values
Audio bandwidth:	50 Hz – 20 kHz
Audio bandwidth (DPL):	50 Hz – 10 kHz
Resolution:	16 bit
Microphone Preamp:	
Mic input impedance	1.6 kOhm
Dynamic mic input level	-52 dBu
Electret mic input level	-38 dBu
Frequency response	80 Hz to 12 kHz, ± 3 dB
Headphone Amplifier:	
Load impedance	24 to 600 Ohms
Max. output level	16 Volts peak-to-peak
Max. output power	160 mW @ 200 Ohms
Frequency response	80 Hz to 12 kHz, ± 3 dB
Signal-to-noise-ratio	> 82 dB (A)
Power Supply:	
Power requirements	+48 VDC
Power consumption	60 mA @ 48 V
Dimensions:	
H x W x D	76 (3) x 255 (10) x 220 mm (9 inch)
Mass	1300g (2,9 lb.)

5 PERFORMER C3 DIGITAL BELTPACK

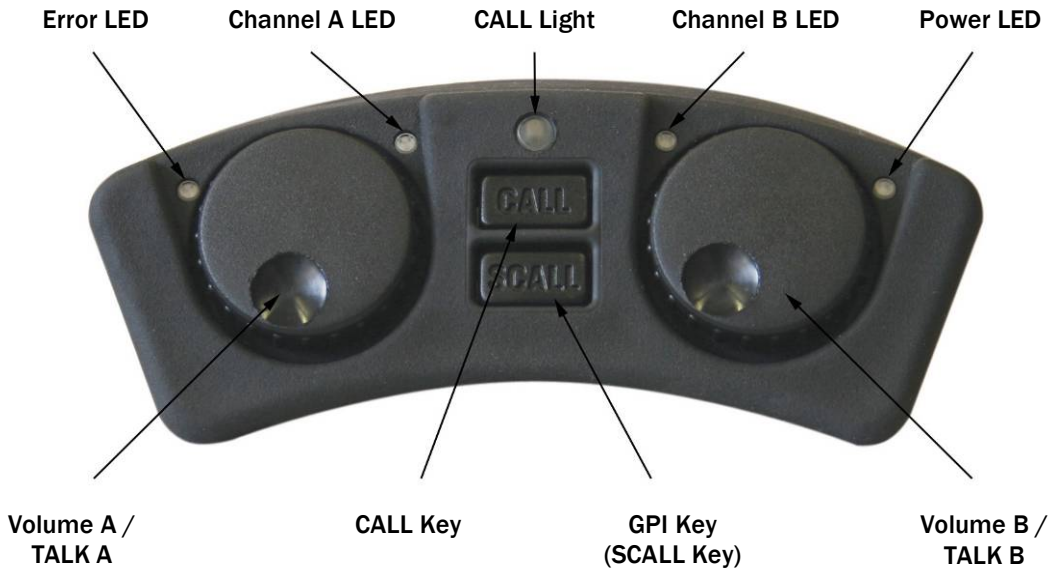
5.1 Get Started

Connect an appropriate headset to the headset connector (→ User Elements Bottom). Select the headset microphone type with the DIP switch 5.

Now connect the C3 into the partyline by connecting the C3 upstream port (→ User Elements Bottom) with the downstream port of the previous device with a 3-pole XLR cable. Once the power LED lights up the C3 is powered correctly, is synchronized with the previous unit and ready to use.

Note: The C3 needs to be connected to a power supply. This could be a C31+PSU or a master station or the system Interface. This power supply must be at the head of the digital partyline chain with C3s connected to the downstream port (→ System Layouts),

5.2 User Elements Top



5.2.1 Error LED (red)

The error LED indicates that the bit error rate has exceeded the range tolerated. This is usually caused by a defective cable or a cable run that is too long. The partyline cannot be used in this case.

Status	Error LED
Partyline error occurred	Red 100%
Partyline works fine	Red 0%

5.2.2 CALL LED (orange)

The CALL LED lights orange when the CALL key is pressed and TALK is active. If an incoming call is received the CALL LED blinks bright orange alternating with the green LED of the channel being called.

Note: When the C3 beltpack is in side tone mode, this combination blinks dimmer than it does when the beltpack is being called (DIP SW8 ON).

Status	CALL LED
Outgoing CALL	Orange 100%
Incoming CALL	Orange 100%, flashing
Side tone adjustment	Orange 50%, flashing fast

5.2.3 Channel A/B LED (green)

This LED blinks green when an incoming call signal is received, as well as when a channel being called is not active. The LED lights sold green when the channel is turned on.

Status	Channel LED
TALK active	Green 100%
Incoming CALL to Channel	Green 100%, flashing

5.2.4 Power LED

The Power LED lights red when the beltpack is correctly powered (36V - 50V).

Status	Power LED
Powered, ON	Red 100%
Insufficient powered, OFF	Red 0%

5.2.5 Channel Knob (2 Functions)

Volume Channel A/B

The channel volume knob levels the channel volume of the C3 (0-100%). Turn the knob clockwise to increase and counterclockwise to decrease the volume of the channel. The channel is MUTED when the encoder is turned counterclockwise as far as it will go.

TALK Channel A/B (Auto / Momentary)

Pressing the left knob activates the TALK for channel A. This is indicated by the green LED. Pressing the right knob activates the TALK for channel B. An active TALK key enables talking to the corresponding digital partyline channel. The TALK key can be set to auto or momentary mode by the DIP switch 1 for channel A and 2 for channel B at the bottom side of the C3.

5.2.6 CALL Key

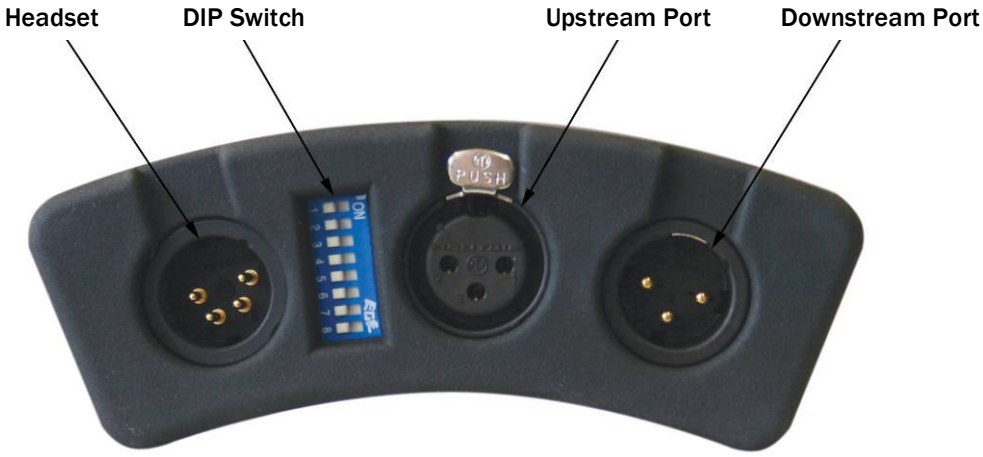
When TALK A or TALK B is active, pressing the CALL key sends a CALL signal to the related channel of the partyline. On all connected devices, the corresponding CALL signal will light up e.g. C3 - TALK LED (green) alternates blinking with the CALL LED (orange).

5.2.7 GPI Key (Formerly SCALL)

If TALK A or TALK B is active, pressing the GPI key (formerly SCALL key) sends a command to close the GPI-out to the devices on the corresponding channel. The GPI signal can also be understood by an Artist/Performer system, if connected.

Note: The function carried out by the GPI key is not displayed on the C3!

5.3 User Elements Bottom



5.3.1 Headset Connector

The headset connector is 4-pole male XLR connector and supports headsets with electret (~4.5V) or dynamic microphones, depending on the DIP switch setting.

Prerequisite	
DIP SW 5 ON	Electret
DIP SW 5 OFF	Dynamic

5.3.2 DIP Switch Functions

SW	OFF	ON	
1	Latched/Auto	Momentary	Switches between momentary and latched for TALK A. In OFF position a short press on the TALK A knob routes the microphone signal to Channel A. Another short press turns it off (Latched). If the knob is pressed and held for longer than 3 seconds it functions as momentary and the channel is closed as soon and the knob is released (Auto). When the DIP switch is in the ON position the channel is only open as long as the knob remains pressed (Momentary).
2	Latched/Auto	Momentary	Switches between momentary and latched/auto for TALK B.
3	Talk & listen	Listen only	Talking on channel A is blocked on this station
4	Talk & listen	Listen only	Talking on channel B is blocked on this station
5	Dynamic microphone	Electret microphone (Phantom power)	Headset microphone setting Changing the DIP switch to ON lowers the audio amplification by -20dB
6	Daisy Chain	Local Input mixed to CH B	When Local Input is active, the downstream connector (3-pole male XLR connector) becomes an analog input. The analog audio signal will be locally mixed onto Channel B. The analog audio input level can be adjusted using the CALL and SCALL keys when TALK is not active. CALL: Level ++ / SCALL: Level --
7	Daisy Chain	Local Input mixed to CH A	Downstream becomes analog input (see above)
8	OFF	Side Tone Adjustment	In ON position the side tone can be adjusted up or down using the Channel A knob. The CALL LED will blink to indicate that the DIP switch is ON. After the side tone has been adjusted SW-8 must be returned to the OFF position!

5.3.3 Upstream

3-pole female XLR connector - Digital data stream FROM the party line (female), not powered by unit. Use this connector to connect upstream devices such as master stations.

5.3.4 Downstream

3-pole male XLR connector - Digital data stream TO the party line (male), not powered by the unit. Use this connector to daisy chain other digital partyline devices to the C3.

5.4 Specifications

Electrical Properties	Values
Audio bandwidth:	50 Hz – 20 kHz
Audio bandwidth (DPL):	50 Hz – 10 kHz
Resolution:	16 bit
Microphone Preamp:	
Mic input impedance	1 kOhm
Dynamic mic input level	-52 dBu
Electret mic input level	-38 dBu
Frequency response	80 Hz to 12 kHz, ± 3 dB
Headphone Amplifier:	
Load impedance	32 to 600 Ohms
Max. output level	24 Volts peak-to-peak
Max. output power	290 mW @ 250 Ohms
Frequency response	20 Hz to 12 kHz, ± 3 dB
Signal-to-noise-ratio	> 80 dB (A)
Power Supply:	
Power requirements	36-48 V DC
Power consumption	22 mA / 50 mA @ 48 V
Dimensions:	
H x W x D	140 (6) x 120 (4,7) x 39 mm (1,5 inch)
Mass	450 g (0.99 lb)

6 PERFORMER CW-2 WALL MOUNT SPK / HS STATION

The Performer CW-2 Wall Mount Speaker / Headset Station is designed for fixed indoor installations. It comes with a standard plastic 4gang wall mount box.

The CW-2 is powered by the digital partyline. To refresh the power of the partyline in complex installations or after long cable runs use the additional power-in connector.

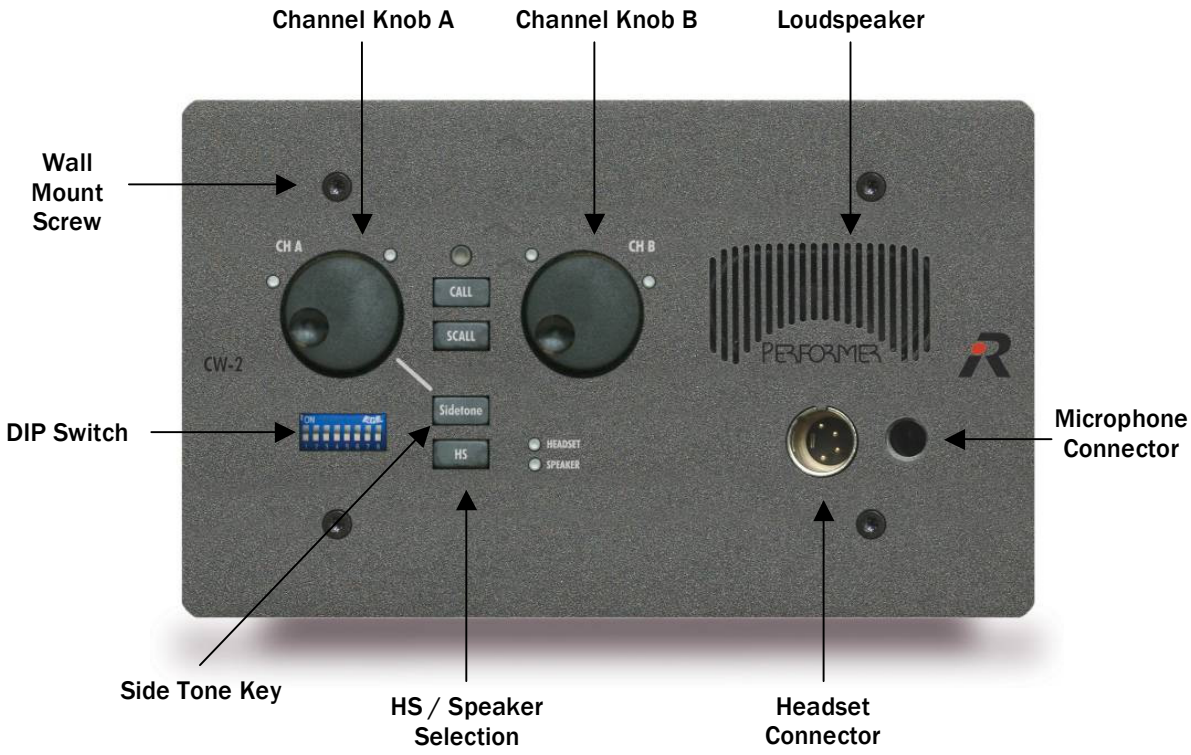
6.1 Get Started

Release the CW-2 with the four wall mount screws carefully from the blue wall mount box attached to the unit. Mount the wall mount box securely to the wall and insert the digital partyline cables.

Strip the down- / upstream wire of the digital partyline with a wire stripper as specified and connect it to the multi-pin connector of the CW-2 (→J100 / J101 Connector Pin Out).

Mount the CW-2 carefully to the wall mount box in the wall. When powering up the system the green power LED of the CW-2 should light up.

6.2 User Elements Front



6.2.1 Channel Knob (2 Functions)

Volume Channel A/B

The channel volume knob adjusts the channel volume of the CW-2 (0-100%). Turn the knob clockwise to increase the volume of the channel and counterclockwise to decrease the volume of the channel. The channel is MUTED when the encoder is turned counterclockwise as far as it will go.

TALK Channel A/B (Auto / Momentary)

Pressing the left knob activates the TALK for channel A. This is indicated by the green LED. Pressing the right knob activates the TALK for channel B. An active TALK key enables talking to the corresponding digital partyline channel. The TALK key can be set to auto or momentary mode using DIP switch 1 for channel A and DIP switch 2 for channel B on the bottom of the C3.

6.2.2 CALL Key

When TALK A or TALK B is active pressing the CALL key sends a CALL signal to the corresponding channel of the partyline. On all connected devices the selected CALL signal will light up e.g. CW-2 - TALK LED (green) alternates blinking with the CALL LED (orange).

6.2.3 GPI Key (Formerly SCALL)

If TALK A or TALK B is active pressing the GPI key (formerly SCALL key) sends a command to the devices to close the GPI-out on the corresponding channel. The GPI signal can also be understood by an Artist/Performer system, if connected.

Note: The function carried out by the GPI key is not displayed on the CW-2!

6.2.4 Side Tone Key (momentary)

Press and hold the Side Tone key to adjust the side tone with the volume knob of channel A. The channel volume knob now adjusts the side tone volume of the CW-2 (0-100%). Turn the knob clockwise to increase and counterclockwise to decrease the volume of the side tone. The side tone is turned OFF when the encoder is turned counterclockwise as far as it will go. This function is momentary and it is indicted by a fast flashing CALL LED.

The side tone key functions in parallel to the side tone DIP switch 8 (latching).

Note: The side tone is designed for the headset mode. Having a side tone in the speaker mode might lead to feedback!

Activating the side tone function also ends active talks!

6.2.5 HS Key (momentary)

Pressing the HS (headset) key selects between the headset mode and the speaker mode. The two LEDs indicate which mode is currently active.

It is recommended not to change the mode while a TALK A or TALK B is active (indicated by the green talk LEDs).

Status	LED
Headset ON, Speaker OFF	Green 100%
Speaker ON, Headset OFF	Red 1000%

6.2.6 Microphone Connector

The microphone connector is Riedel's standard 6.3mm microphone connector for electret microphones, such as MIC 30 / MIC 3 (optional). Turn the microphone connector clockwise to attach the microphone to the unit.

6.2.7 Headset Connector

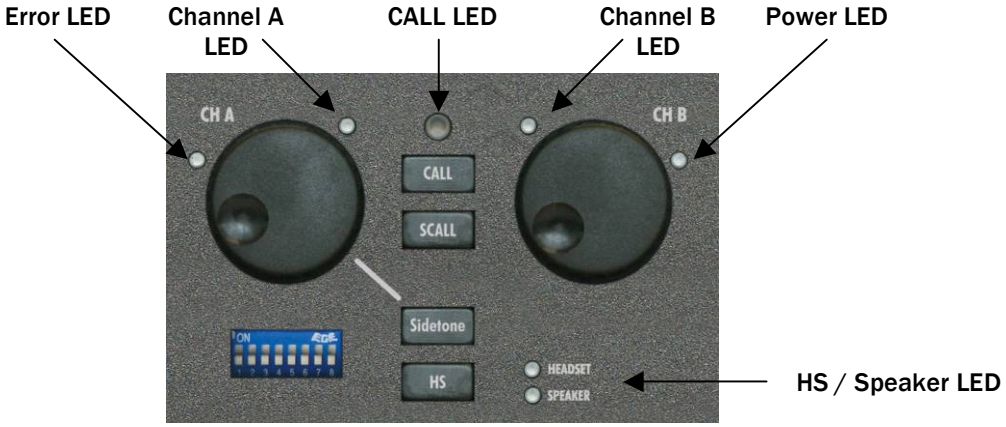
The headset connector is 4-pole male XLR connector and supports headsets with electret (~4.5V) or dynamic microphones, depending on the DIP switch setting.

Setting	
DIP SW 5 ON	Electret
DIP SW 5 OFF	Dynamic

6.2.8 Error LED (red)

The error LED indicates that the bit error rate has exceeded the range tolerated. This is usually caused by a defective cable or a cable run that is too long. The partyline cannot be used in this case.

Status	Error LED
Partyline error occurred	Red 100%
Partyline works fine	Red 0%



6.2.9 CALL LED (orange)

The CALL LED lights orange when the CALL key is pressed and TALK is active. If an incoming call is received the CALL LED blinks bright orange alternating with the green LED of the channel being called.

Note: When the C3 beltpack is in side tone mode, this combination blinks dimmer than it does when the beltpack is being called (DIP SW8 ON).

Status	CALL LED
Outgoing CALL	Orange 100%
Incoming CALL	Orange 100%, flashing
Side tone adjustment	Orange 50%, flashing fast

6.2.10 Channel A/B LED (green)

This LED blinks green when an incoming call signal is received, as well as when a channel being called is not active. The LED lights sold green when the channel is turned on.

Status	Channel LED
TALK active	Green 100%
Incoming CALL to Channel	Green 100%, flashing

6.2.11 Power LED

The Power LED lights red when the beltpack is powered correctly (36V - 50V).

Status	Power LED
Powered, ON	Red 100%
Insufficiently powered, OFF	Red 0%

6.2.12 HS LED (green) / Speaker LED (red)

These two LEDs indicate if the CW-2 is in headset or speaker mode.

Status	LED
Headset ON, Speaker OFF	Green 100%
Speaker ON, Headset OFF	Red 100%

6.2.13 DIP Switch CW-2

SW	OFF	ON	
1	Latched/Auto	Momentary	Switches between momentary and latched for TALK A. In OFF position a short press on the TALK A knob routes the microphone signal to Channel A. Another short press turns it off (Latched). If the knob is pressed and held for longer than 3 seconds it functions as momentary and the channel is closed as soon and the knob is released (Auto). When the DIP switch is in the ON position the channel is only open as long as the knob remains pressed (Momentary).
2	Latched/Auto	Momentary	Switches between momentary and latched for TALK B.
3	Talk & listen	Listen only	Talking on channel A is blocked on this station
4	Talk & listen	Listen only	Talking on channel B is blocked on this station
5	Dynamic microphone	Electret microphone (Phantom power)	Headset microphone setting Changing the DIP switch to ON lowers the audio amplification by -20dB
6	Daisy Chain	Local Input	When Local Input is active, the downstream connector (J100 contacts 4, 5, 6) becomes an analog input. The analog audio signal will be locally mixed onto Channel B. The analog audio input level can be adjusted using the CALL and SCALL keys when TALK is not active. CALL: Level ++ / SCALL: Level –
7			
8	OFF	Side Tone Adjustment	In ON position the side tone can be adjusted up or down using the Channel A knob. The CALL LED will blink to indicate that the DIP switch is ON. After the side tone has been adjusted SW-8 must be returned to the OFF position! Note: For quick adjustments of the side tone the additional side tone key is more appropriate.

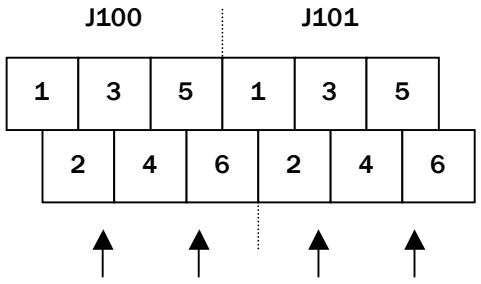
Note: When the DIP switch 6 is in position ON, other devices that are daisy chained on this downstream connector do not work!

6.3 The Multi-Pin Connector

6.3.1 J100 / J101 Connector Pin Out

Connector	Pin	Values	Connect to
J100	1	GND	Cable shield
J100	2	Partyline Upstream +	Cable wire
J100	3	Partyline Upstream -	Cable wire
J100	4	GND	Cable shield
J100	5	Partyline Downstream +	Cable wire
J100	6	Partyline Downstream -	Cable wire
J101	1	GND	Optional
J101	2	+48V extern	Optional
J101	3	GND	Optional
J101	4	Line Out +	Optional
J101	5	Line Out -	Optional
J101	6	GND	Optional

Nominal Cross-section	1.5mm² (single wire)
	1.0mm² (finely stranded)
	AWG 16
Thread Diameter	single wire – 0.3mm – 1.4mm
	AWG 22 – 16
Wire Stripping Length	5mm



Upstream

The upstream connector is for connecting the CW-2 to the preceding piece of equipment on the partyline (→J100 pin out for details).

Downstream

The downstream connector is for connecting the CW-2 to the next piece of equipment on the partyline (→J100 pin out for details).

Audio Line Connector

The headset / speaker audio signal is also fed to a line out interface. The level of this symmetrical output depends on the volume of channel A / B.

Connect the external analogue audio device as shown in the J101 pin out.

48V Supply Input

The CW-2 provides a 48V DC input to power the digital partyline. The CW-2 can be powered from this input or with the 48V phantom power that is provided by the partyline.

The 48V DC supply must not exceed this voltage! The DC source must be limited to 1.8 amps. Connect the external DC supply as shown in the J101 pin out.

6.3.2 Connection to 3-pole XLR cable

Connector	Pin	Values	3-pole XLR cable
J100	1	GND	Pin 1 (XLR connector male)
J100	2	Partyline Upstream +	Pin 2 (XLR connector male)
J100	3	Partyline Upstream -	Pin 3 (XLR connector male)
J100	4	GND	Pin 1 (XLR connector female)
J100	5	Partyline Downstream +	Pin 2 (XLR connector female)
J100	6	Partyline Downstream -	Pin 3 (XLR connector female)

6.3.3 Downstream Analogue Input

The downstream connector on the CW-2 can also be used as a local analogue input

→ DIP switch 6, 7

Connector	Pin	Values	Connect to
J100	4	GND	Cable shield
J100	5	Audio In +	Cable wire
J100	6	Audio IN -	Cable wire

6.4 Specifications

Electrical Properties	Values
Audio bandwidth:	50 Hz – 20 kHz
Audio bandwidth (DPL):	50 Hz – 10 kHz
Resolution:	16 bit
Microphone Preamp:	
Mic input impedance	1 kOhm
Dynamic mic input level	-52 dBu
Electret mic input level	-38 dBu
Frequency response	80 Hz to 12 kHz, ± 3 dB
Headphone Amplifier:	
Load impedance	32 to 600 Ohms
Max. output level	24 Volts peak-to-peak
Max. output power	290 mW @ 250 Ohms
Frequency response	20 Hz to 12 kHz, ± 3 dB
Signal-to-noise-ratio	> 80 dB (A)

Power Supply:	
Output voltage	with optional C31 PS
Output current	
Power requirements	36-48 V DC
Power consumption	180mA @ 48 V
Dimensions:	
H x W x D	134 (5,3) x 223 (8,8) x 44 mm (1,7 inch)

7 PERFORMER C31 SPLIT BOX

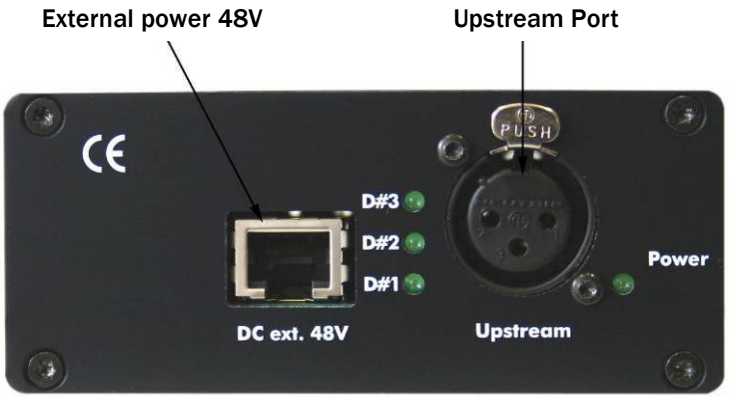
The C31 is used to create splits in the digital partyline. The audio signals are processed entirely digitally by DSP chips. The C31 is normally powered by the digital partyline.

With its external power connector the C31 enables the insertion of additional power (optional C31 PSU) into the partyline to compensate for power loss due to long cable runs. It is recommended to power each C31 in complex installations with long cable runs or many digital partyline devices.

The C31 has one upstream and three downstream connectors.

Note: Even if the additional external power supply is not used, all three downstream connections are still powered by the single upstream line.

7.1 User Elements “Upstream“



7.1.1 DATA LED

The three green data LEDs D#1, D#2, and D#3 show the status of each downstream port

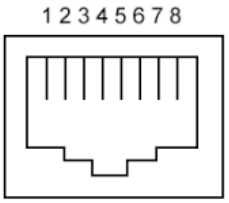
Status	Data LEDs
No Device Found / Not synchronized	Green 100%, flashing
Device Synchronized	Green 100%

7.1.2 Power LED

The power LED indicates if the C31 is powered either over the partyline or via the external power supply.

Status	Power LED
Powered correctly	Green 100%
No Power	Green 0%

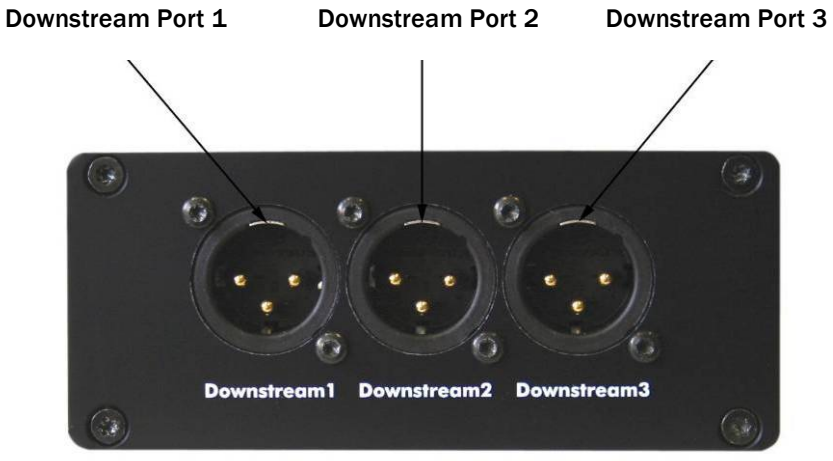
7.1.3 Pin Out DC ext. 48V



DC in RJ 45

Pin	Signal
1	
2	
3	
4	48V
5	48V
6	
7	GND
8	GND

7.2 User Elements “Downstream”



7.3 Specifications

Electrical Properties	Values
Audio bandwidth (digital partyline):	50 Hz – 10 kHz
Resolution:	16 bit
Supply voltage:	20 V – 50 V DC
Mechanical Properties	
Height	44mm (1.75”)
Width	105mm (4.1”)
Depth	107mm (4.2”)
Weight	380g (0.8 lbs)
General	
Temperature range	-10 to +50 C (14 to 122 F)

8 PERFORMER C44 / C44PLUS SYSTEM INTERFACE

The C44 / C44plus drives up to 4 partylines. Through the integrated 2-wire/4-wire converter it enables digital connections to an Artist/Performer matrix intercom system over a CAT-5 cable using the Artist I/O ports. In addition, the front of the unit has eight analog ports where the partyline audio signals can be accessed. Using these analog ports or the AES (Artist I/O ports), the C44 / C44plus System Interface can be connected to other third-party intercom systems.

8.1.1 Get Started

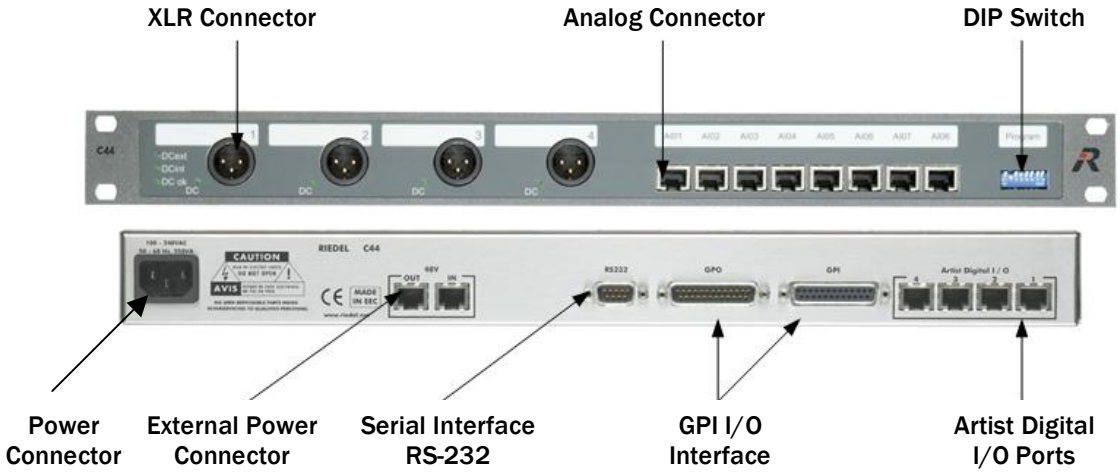
Connect the C44 / C44plus System Interface to power. The 4 LEDs next to each 3-pole XLR connector, as well as the DC INT and DC OK LEDs will light up green.

Connect the first device (e.g. C3 beltpack) to the C44 / C44plus System Interface with a 3-pole XLR cable. The power LED on the C3 beltpack should light up red. Now connect the second device to the “Downstream” connector on the first C3 beltpack and so on. You can connect up to a total of 16 units in a row per partyline.

In order to prevent interruptions of the audio signal, keep the cable length as short as possible. Make sure that all connectors are securely attached to the C44 / C44plus. Poorly secured connectors lead to static in the audio system and can also cause a reset of the entire partyline. If a large number of devices are operated on a single partyline a large drop in voltage may occur, depending on the ohm resistance of the cable used. In this case, the voltage can be boosted by adding of other powering devices, such as C31+PSU.

Note: If three or more devices are connected per port to the System Interface, a 1RU space between the C44 / C44plus and other equipment should be allowed when possible to ensure adequate ventilation.

The picture below shows a C44 front and rear side.



8.1.2 Basic Configuration

If the C44 / C44plus is connected to an intercom system via the Artist Digital I/O ports on the rear of the unit the I/Os should be connected one-to-one.

Example:
The audio signal is split to the connectors I/O 1, partyline 1 and analog 1 a/b. On the analog connectors, AIO1 is the first channel; AIO2 is the second channel (and so on).

During stand-alone use the respective DIP switch settings apply (see Chapter 5).

8.2 User Elements Front

8.2.1 LEDs

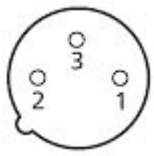
The LEDs at the front of the unit provide quick status information about the C44 / C44plus.

	LED	Status
DCext	Green 100%	Power is connected to 48V IN rear connector
DCint	Green 100%	Main power is connected to 110-230V IN connector
DC ok	Green 100%	Internal power supply functioning normally
DC	Green 100%	Partyline channel is powered

8.2.2 3-pole XLR Connectors

Digital Partyline connectors to connect digital partyline devices via a standard 3-pole XLR cable. Up to 16 beltpacks (C3) can be powered over each C44 / C44plus XLR port.

Pin Out:



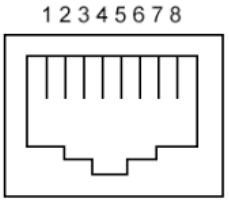
3-pole male XLR (Front)

Pin	Signal
1	GND
2	TX/RX+ , Power+
3	TX/RX - , Power+

8.2.3 Analog Connections

If a digital signal from the Artist to the partyline also needs to be sent to external analog equipment this can be done using the analog RJ-45 I/Os. Likewise, if an analog signal needs to be added to the partyline this is also done with the analog I/Os. When used with an Artist matrix, the analog I/Os are connected one-to-one with the digital I/Os. In other words, if there is a signal coming from Artist on the digital I/O port 1 of the C44 / C44plus System Interface, then it is also available on the analog inputs and outputs AIO 1/2. During standalone use the DIP switch settings take precedence (see Chapter 5).

Pin Out RJ45- Connector (Front)



Pin	Signal
1	
2	
3	
4	Audio IN +
5	Audio IN -
6	
7	Audio OUT +
8	Audio OUT -

Audio RJ45

8.2.4 DIP Switches

The DIP switches are only active during stand-alone operation. They are used to select between eight preset configurations. The highest numbered DIP switch has the highest priority. For example, if DIP switches 2 and 6 are both in the ON position, the internal matrix will be configured according to DIP switch 6.

Further information about the configuration of the DIP switches can be found in Chapter 5.

8.2.5 USB Port (C44plus only)

Connect your personal computer to the C44plus AFTER the USB driver is successfully installed. Use the Audio Assignment Software (AAS) to configure the cross points of the C44 plus. (→ see AAS manual for details)

8.3 User Elements Rear

8.3.1 Power Connector

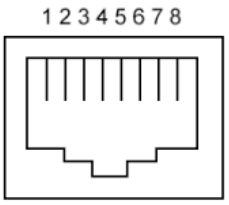
Standard power connector for 110-220 VAC.

8.3.2 External Power Connector

If multiple C44 / C44plus are used in an installation, the C44 / C44plus can be set-up for redundancy in order to bridge a power supply failure.

The connection of an external universal power supply is also possible (48V, 3A).

Pin Out DC in / DC out RJ 45



DC in / DC out RJ 45

Pin	Signal
1	
2	
3	
4	48V
5	48V
6	
7	GND
8	GND

8.3.3 Serial Interface RS232 - D-SUB 9 Connector (C44 only)

This port is for the Audio Assignment Software (→ see AAS manual for details)

8.3.4 GPIO Interface

Using the GPIO interface each partyline can send and receive the commands CALL A, CALL B, and Mic Kill.

Pin Out: GPI In - D-SUB 25 Connector

Pin	Signal GPI	Function
1	IN1 +	CALL A Line #1
2	IN2 +	CALL B Line #1
3	IN3 +	MIC Kill Line #1
4	IN4 +	CALL A Line #2
5	IN5 +	CALL B Line #2
6	IN6 +	MIC Kill Line #2
7	IN7 +	CALL A Line #3
8	IN8 +	CALL B Line #3
9	IN9 +	MIC Kill Line #3
10	IN10 +	CALL A Line #4
11	IN11 +	CALL B Line #4
12	IN12 +	MIC Kill Line #4
13	GND	
14	IN1 -	CALL A Line #1
15	IN2 -	CALL B Line #1
16	IN3 -	MIC Kill Line #1
17	IN4 -	CALL A Line #2
18	IN5 -	CALL B Line #2
19	IN6 -	MIC Kill Line #2
20	IN7 -	CALL A Line #3
21	IN8 -	CALL B Line #3
22	IN9 -	MIC Kill Line #3
23	IN10 -	CALL A Line #4
24	IN11 -	CALL B Line #4
25	IN12 -	MIC Kill Line #4

Pin Out: GPI Out - D-SUB 25 Connector

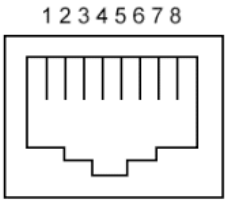
PIN	Signal GPO	Function
1	OUT1 A	CALL A Line #1
2	OUT2 A	CALL B Line #1
3	OUT3 A	SCALLA Line #1
4	OUT4 A	CALL A Line #2
5	OUT5 A	CALL B Line #2
6	OUT6 A	SCALLA Line #2
7	OUT7 A	CALL A Line #3
8	OUT8 A	CALL B Line #3
9	OUT9 A	SCALLA Line #3
10	OUT10A	CALL A Line #4
11	OUT11A	CALL B Line #4
12	OUT12 A	SCALLA Line #4
13	+5V	
14	OUT1 B	CALL A Line #1
15	OUT2 B	CALL B Line #1
16	OUT3 B	SCALLA Line #1
17	OUT4 B	CALL A Line #2
18	OUT5 B	CALL B Line #2
19	OUT6 B	SCALLA Line #2
20	OUT7 B	CALL A Line #3
21	OUT8 B	CALL B Line #3
22	OUT9 B	SCALLA Line #3
23	OUT10B	CALL A Line #4
24	OUT11B	CALL B Line #4
25	OUT12 B	SCALLA Line #4

8.3.5 Artist Digital I/O Ports

Use the Artist Digital I/O ports of the C44 / C44plus to connect the digital partyline to an Artist or Performer matrix. This enables the user of the matrix to speak directly to the digital partyline and vise versa in digital audio quality.

Note: If the C44 / C44plus is connected to the matrix in dual channel mode (both CH A and CH B enabled), please refer to the Director Software manual to see how to configurate the matrix CAT ports for dual channel mode (second channel of C3 enabled).

Pin Out Artist I/O



Artist I/O RJ 45

Pin	Signal
1	TX +
2	TX -
3	RX +
4	
5	
6	RX -
7	
8	

8.4 Program Select via DIP Switch (Front)

The following diagrams show the configuration associated with each DIP switch.

Note: When the C44 / C44plus is used with the audio assignment software (→ see audio assignment manual) the configurations may vary!

The following abbreviations are used:

Artist _a = first channel

Artist _b = second channel

DPL _a = partyline first channel

DPL _b = partyline second channel

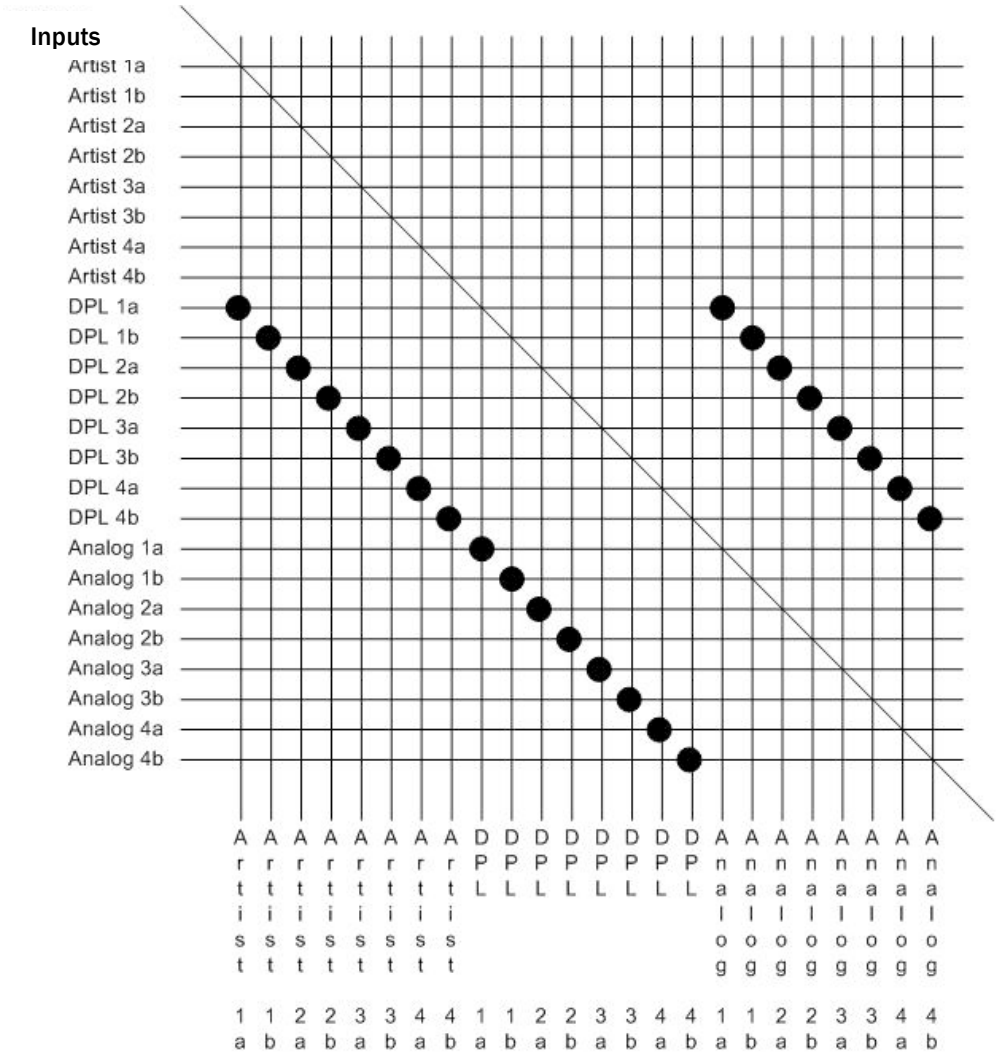
AIO 1 = one of the eight audio input/output outputs

Notes: The DIP switch with the highest number has the highest priority. When connected to an Artist system, the DIP switches are not active. When DIP switch 8 is selected, NO cross point is active. In this mode, the C44 / C44plus functions as a pure power supply for four digital partylines.

DIP switch 1

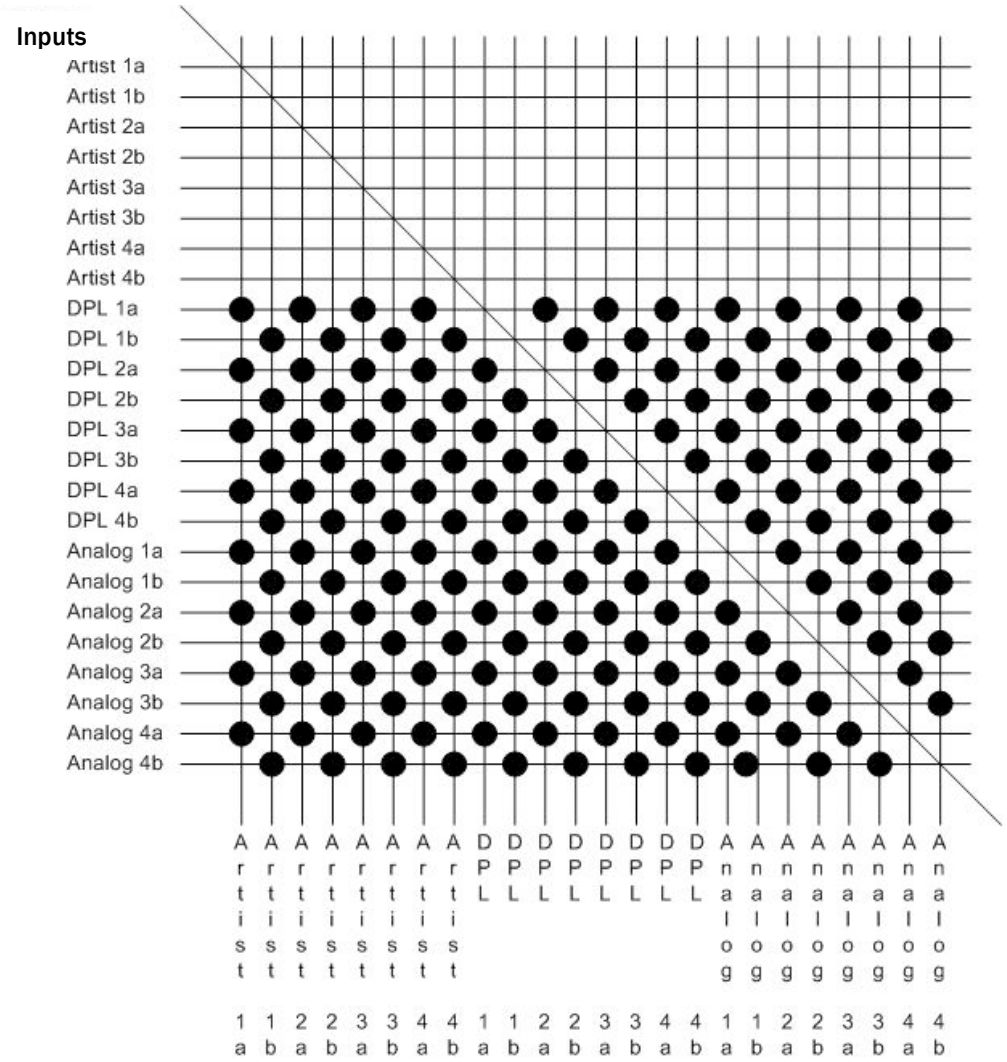
set to "ON": DPL1 to Analog1 and Artist I/O 1

DPL2 to Analog2 and Artist I/O 2, and so on



DIP switch 2

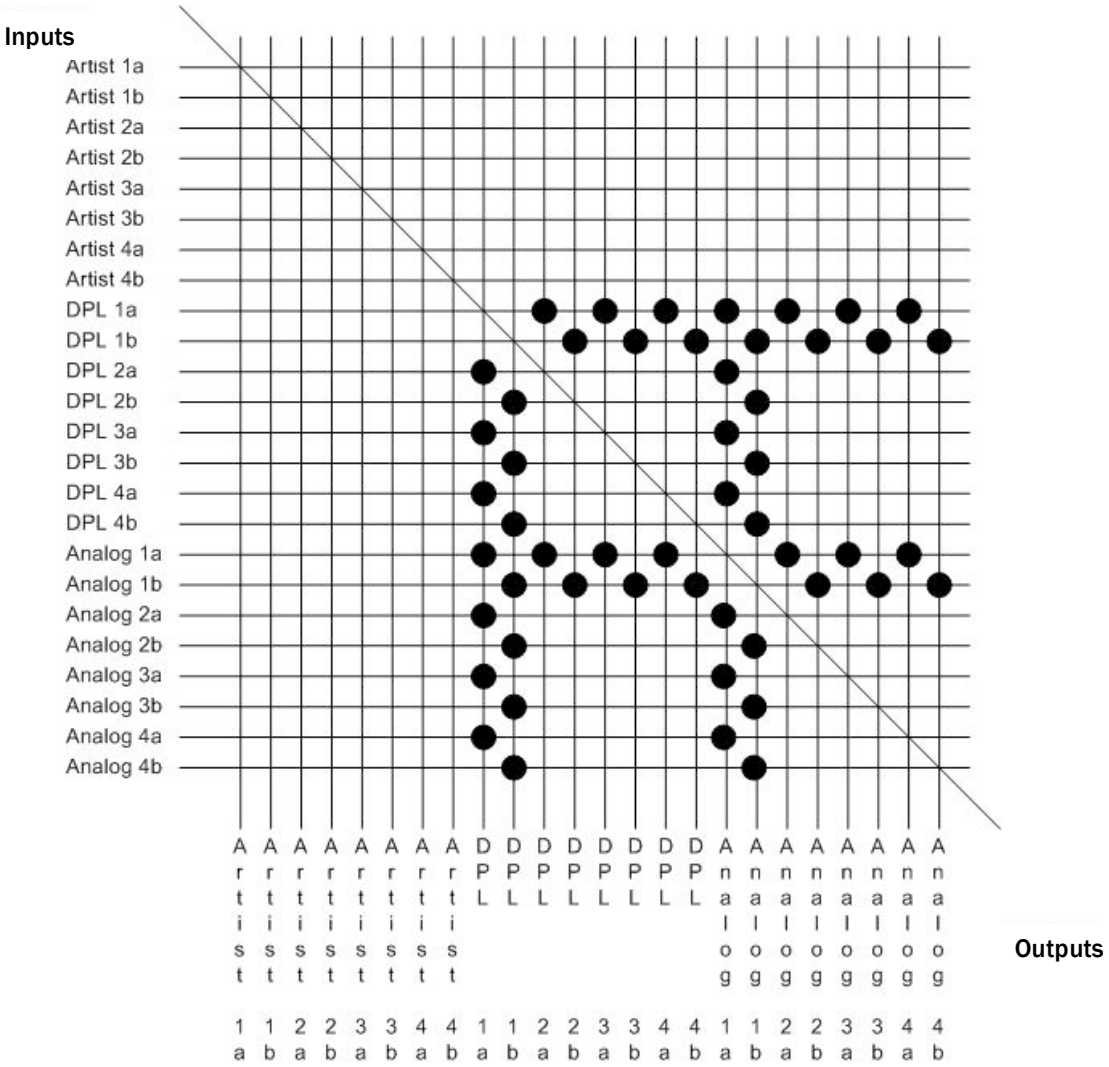
set to "ON": All lines are connection to one another



DIP switch 3

set to "ON": DPL1 is connected to DPL2 + DPL3 + DPL4

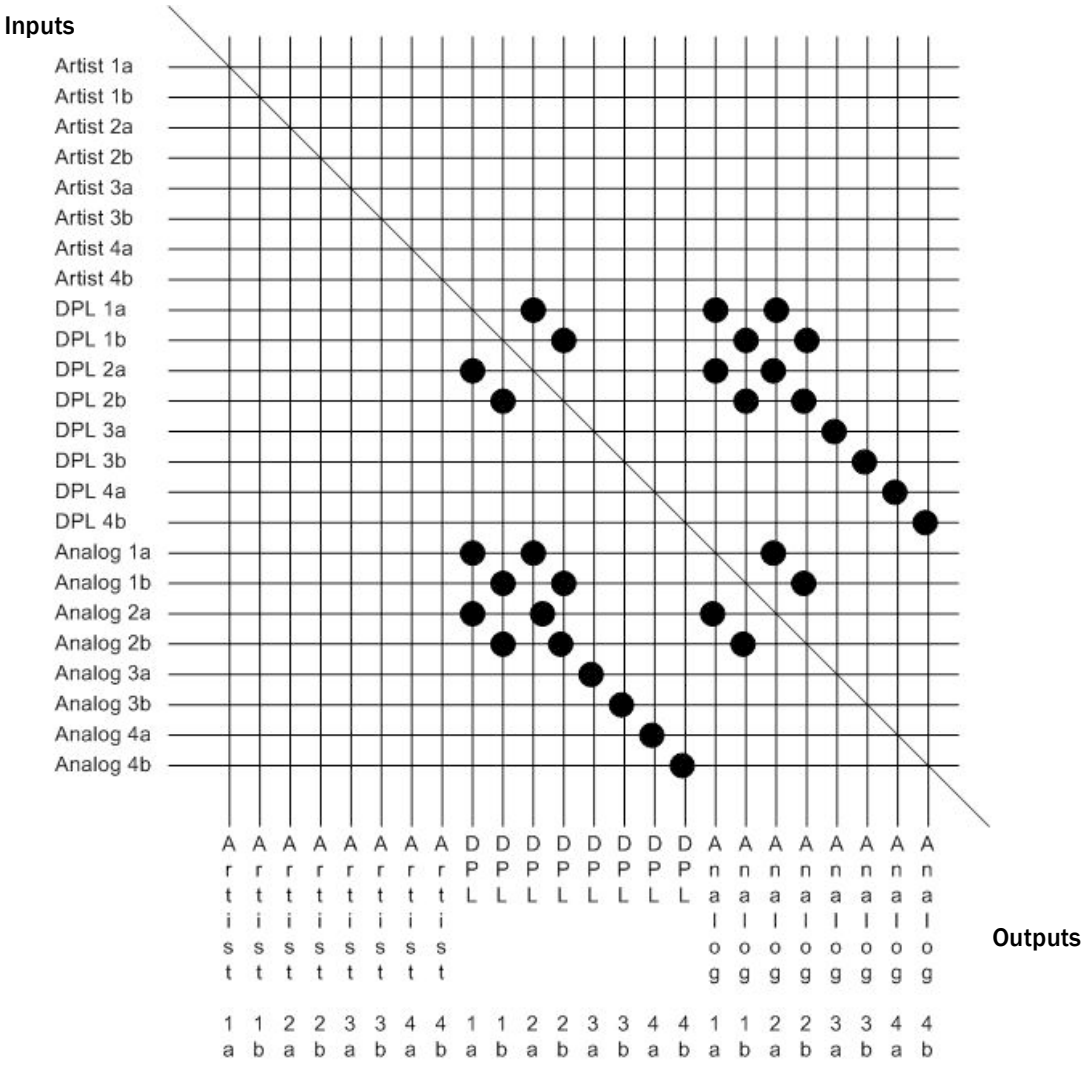
DPL1 is connected to Analog 2 +3 +4



DIP switch 4

set to "ON": DPL1 + DPL2/Analog 1 + 2 are connected

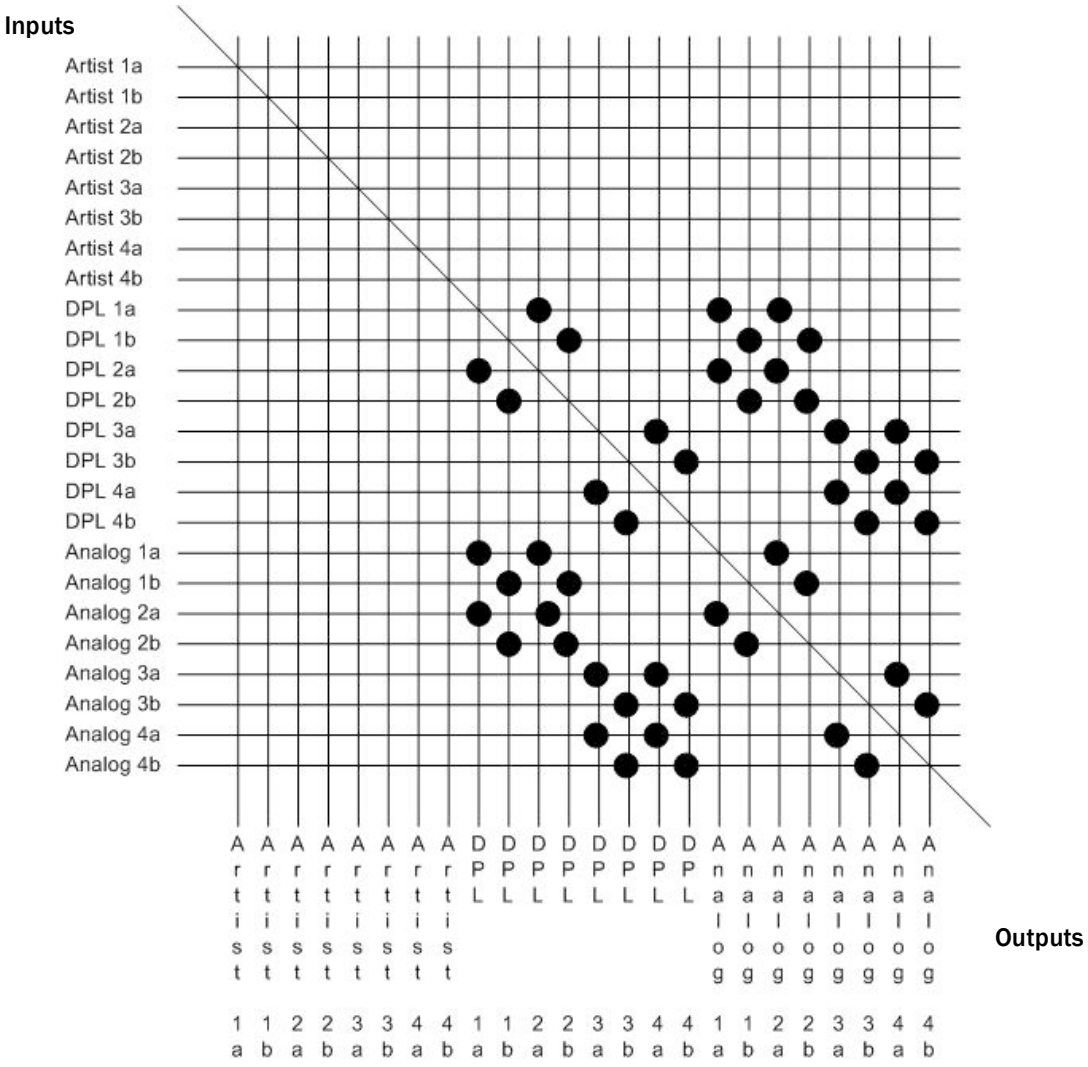
DPL3 + DPL4 are routed to their own analog connectors



DIP switch 5

set to "ON": DPL1 + Analog 1 are connected to DPL2 + Analog 2

DPL3 + Analog 3 are connected to DPL4 + Analog 4

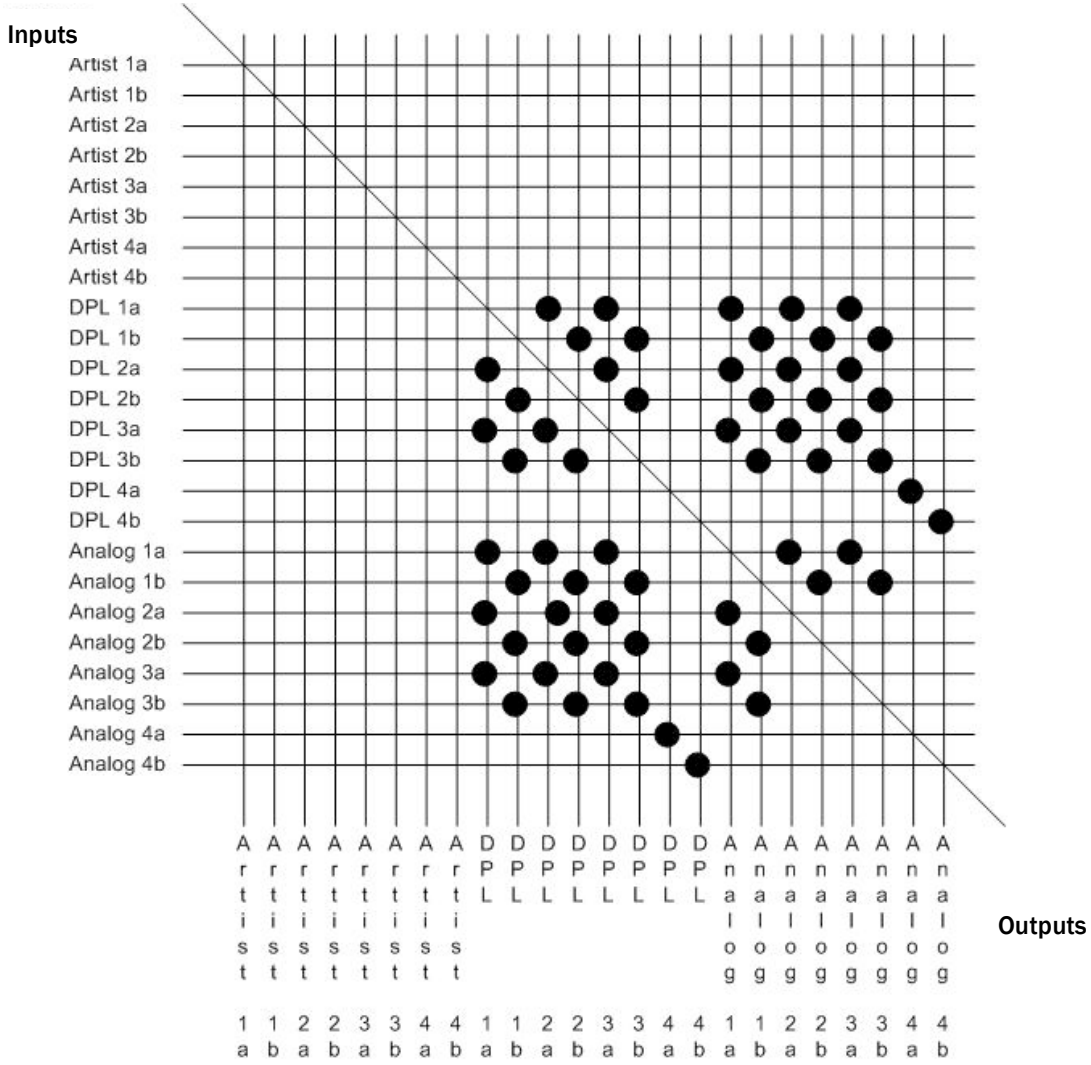


DIP switch 6

set to "ON": DPL1 is connected to 2 + 3 + Analog 2 + 3

DPL2 is connected to 1 + 3 + Analog 1 + 3

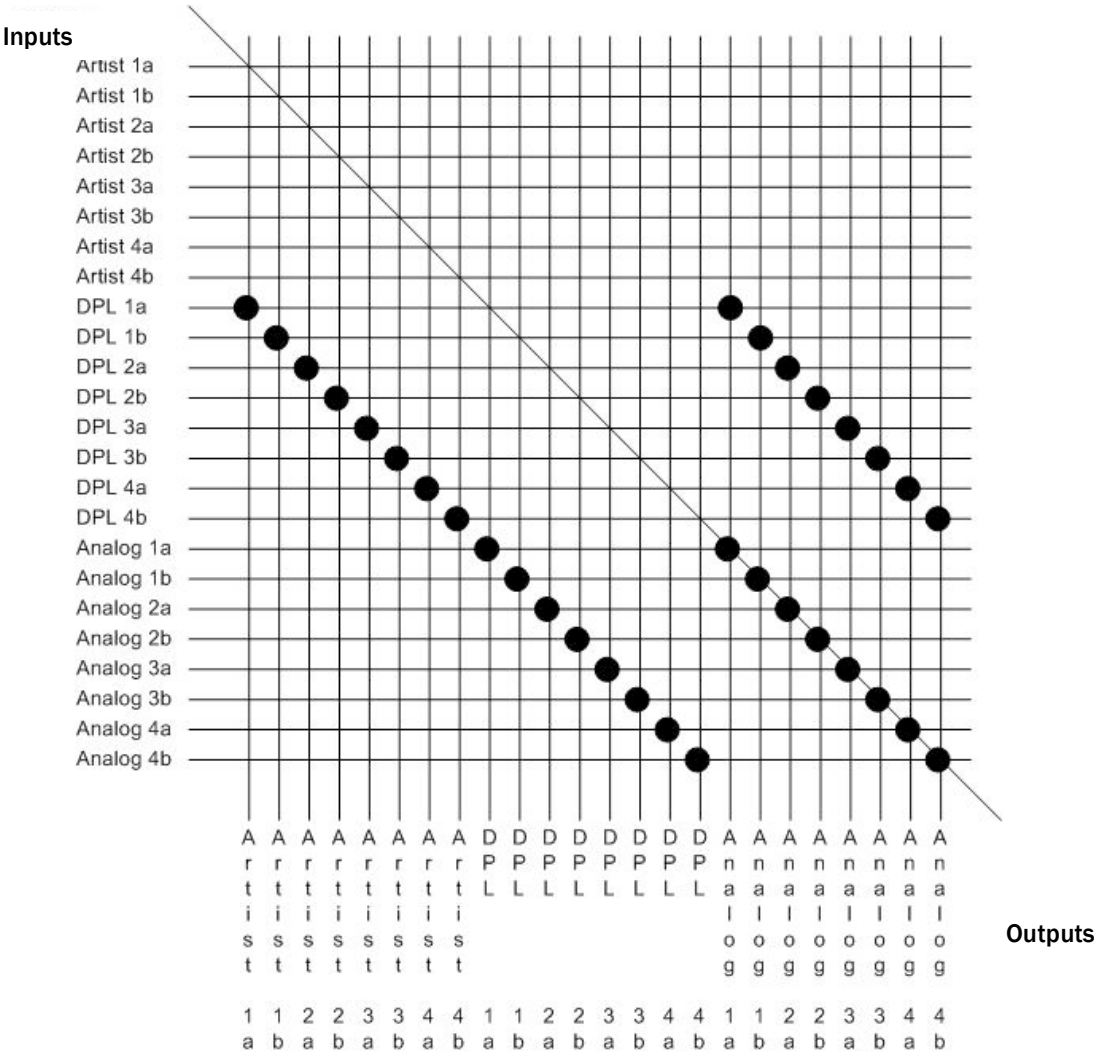
DPL3 is connected to 1 + 2 + Analog 1 + 2



DIP switch 7

set to "ON": DPL1 is connected to Artist 1 and Analog 1

DPL2 is connected to Artist 2 and Analog 2, and so on



8.5 Specifications

Electrical Properties	Values
Audio bandwidth:	50 Hz – 20 kHz
Audio bandwidth (DPL):	50 Hz – 10 kHz
Resolution:	16 bit
Input voltage	100V-240V AC
Power Supply	
Power consumption	250VA max.
Input frequency	50-60 Hz
Output voltage	48V DC
Max. load current (all outputs)	3A
Mechanical Properties	
Height	44mm (1RU)
Width	485mm (19“)
Depth	250mm (9.8”)
Weight	3.5 kg (7.7 lbs)
General	
Temperature range	-10 to +50 C (14 to 122 F)

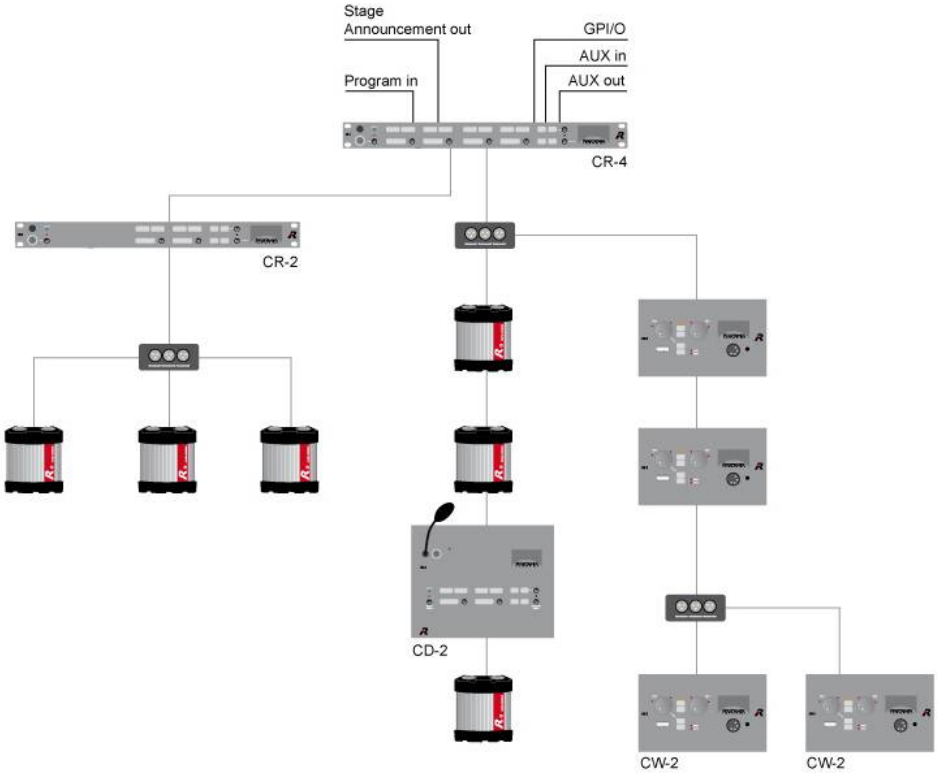
9 SYSTEM LAYOUTS

9.1 Stand Alone

The following setups give examples of how to setup a digital partyline system.

Basic Set-up

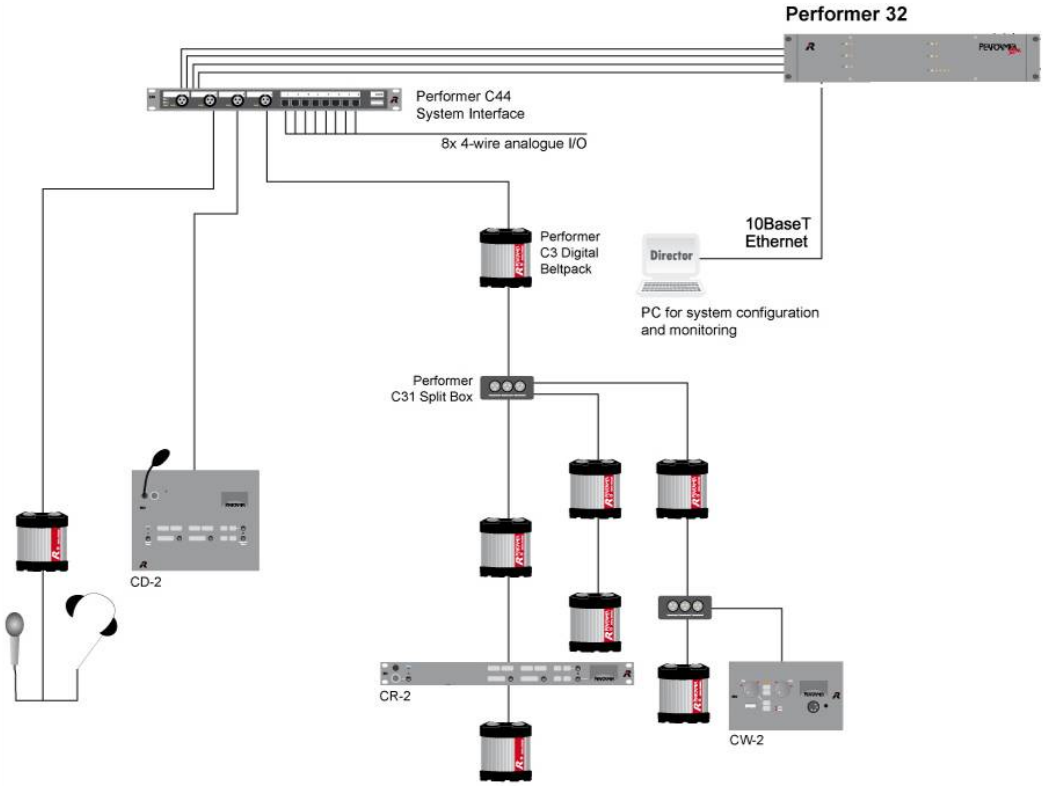
Master Station Set-up



9.2 Integration with Artist/Performer Matrix

Integrate your digital Performer partyline seamlessly with your Artist/Performer intercom matrix by using the C44 / C44plus system interface.

The C44 / C44plus provides four CAT-5 connectors (Artist I/O) on the rear corresponding with the four digital partyline lines (→ C44 / C44plus rear connectors).



9.2.1 Physical Connection

Simply connect the C44 / C44plus system interface using standard CAT-5 cable via the Artist I/O rear ports to an Artist/Performer matrix CAT-5 client card.

Each C44 / C44plus Artist I/O port represents one digital partyline with its two channels. It is not necessary to connect all four ports to the matrix if not all partylines need to communicate with the matrix.

If you want to use both partyline channels of one line for communication with the matrix (e.g. Line 1 Ch A & Ch B), please setup the matrix client card port in two-channel mode (→ Director Setup).

The tables on the following page explain the cabling between the C44 / C44plus and the matrix for one and two channel mode. Of course a mixture of both is possible.

One-Channel Mode Cabling:

Artist I/O Port	CAT 5 Client Card Port	Partyline
1	1	Line 1 Channel A
2	2	Line 2 Channel A
3	3	Line 3 Channel A
4	4	Line 4 Channel A

Two-Channel Mode Cabling:

Artist I/O	CAT 5 Client Card Port	Partyline
1	1	Line 1 Channel A
	2 (leave empty!)	Line 1 Channel B
2	3	Line 2 Channel A
	4 (leave empty!)	Line 2 Channel B
3	5	Line 3 Channel A
	6 (leave empty!)	Line 3 Channel B
4	7	Line 4 Channel A
	8 (leave empty!)	Line 4 Channel B

Note: If the digital partyline connection to the matrix is in two-channel mode, each C44 / C44 plus Artist I/O port must be connected to an odd-numbered CAT-5 port of your matrix client card (e.g. port 1, 3, 5 or7). The next even-numbered port of your matrix (e.g. 2, 4, 6, or 8) must be left empty. This even-numbered port will be used for the B channel of your partyline - no physical connection required!

9.2.2 Director Setup

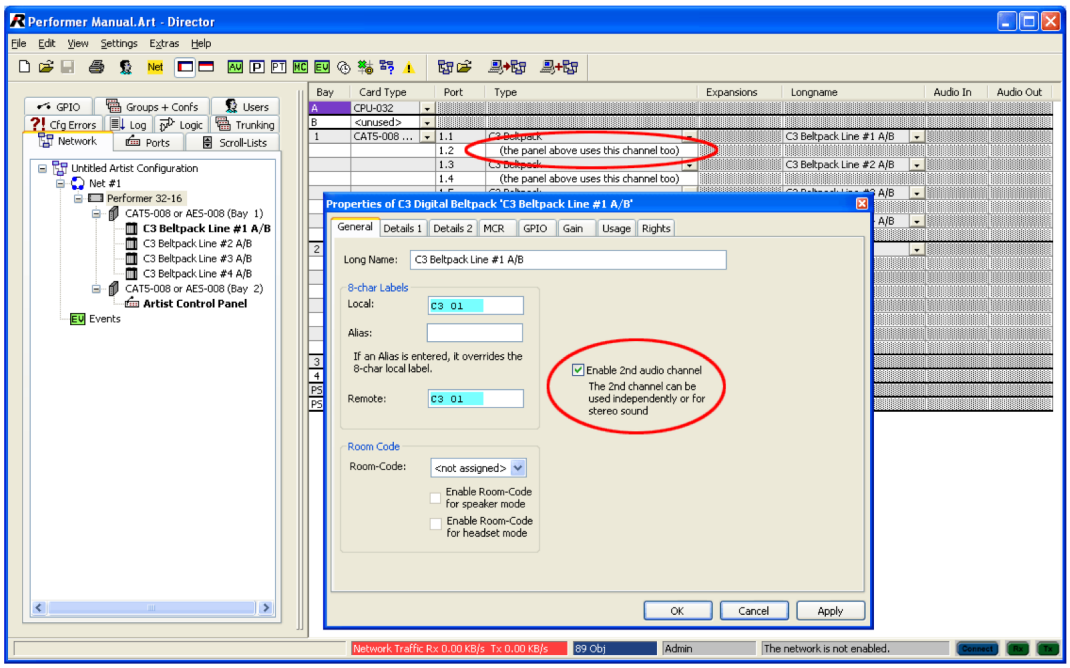
When the physical connection between the C44 / C44plus system interface and the matrix is established, start the Director software and establish the connection to the Matrix. Click on 'Network' tab on the left. Double click on the matrix the C44 / C44plus is connected to, to view the "Port List" of the matrix in the right window.

If not already installed, install the CAT-5 client card in the correct bay by selecting the CAT-5 client card from the 'Card Type' pull down menu. For proper operation of the Performer partyline with a Riedel matrix intercom system the client card software Version 5107Qxx or higher is required. (→Director Manual – Client Card Setup)

Once the client card is installed, click on the corresponding client card port where the first C44 / C44plus Artist port is connected to. Now select in the 'Type' pull down menu the "C3

Digital Beltpack" for this port as the device. The connection between the matrix and the e.g. line 1 channel A of the digital partyline is now established.

For two-channel mode (both digital partyline channels should correspond with the matrix), make a right click on the 'C3- Beltpack' now visible in the left 'Network' tab window and open the 'Properties' menu. Here check the 'Enable 2nd audio channel'. This automatically blocks the next even-numbered port in the 'Port List' on the right side of the main window. The port is blocked and you will see the statement 'the panel above uses this channel too'. The connection between the matrix and, for example, line 1 channel B of the digital partyline is also now established.


Performer Manual.Art - Director
File Edit View Settings Extras Help
Bay Card Type Port Type Expansions Longname Audio In Audio Out
(the panel above uses this channel too)
C3 Beltpack Line #1 A/B
C3 Beltpack Line #2 A/B
Properties of C3 Digital Beltpack 'C3 Beltpack Line #1 A/B'
General Details 1 Details 2 MCR GPIO Gain Usage Rights
Long Name: C3 Beltpack Line #1 A/B
8-char Labels
Local: C3 01
Alias:
If an Alias is entered, it overrides the 8-char local label.
Remote: C3 01
Enable 2nd audio channel
The 2nd channel can be used independently or for stereo sound
Room Code
Room-Code: <not assigned>
Enable Room-Code for speaker mode
Enable Room-Code for headset mode
OK Cancel Apply
Untitled Artist Configuration
Net #1
Performer 32-16
CAT5-008 or AES-008 (Bay 1)
C3 Beltpack Line #1 A/B
C3 Beltpack Line #2 A/B
C3 Beltpack Line #3 A/B
C3 Beltpack Line #4 A/B
CAT5-008 or AES-008 (Bay 2)
Artist Control Panel
Events
Network Traffic Rx 0.00 KB/s Tx 0.00 KB/s
89 Obj
Admin
The network is not enabled.

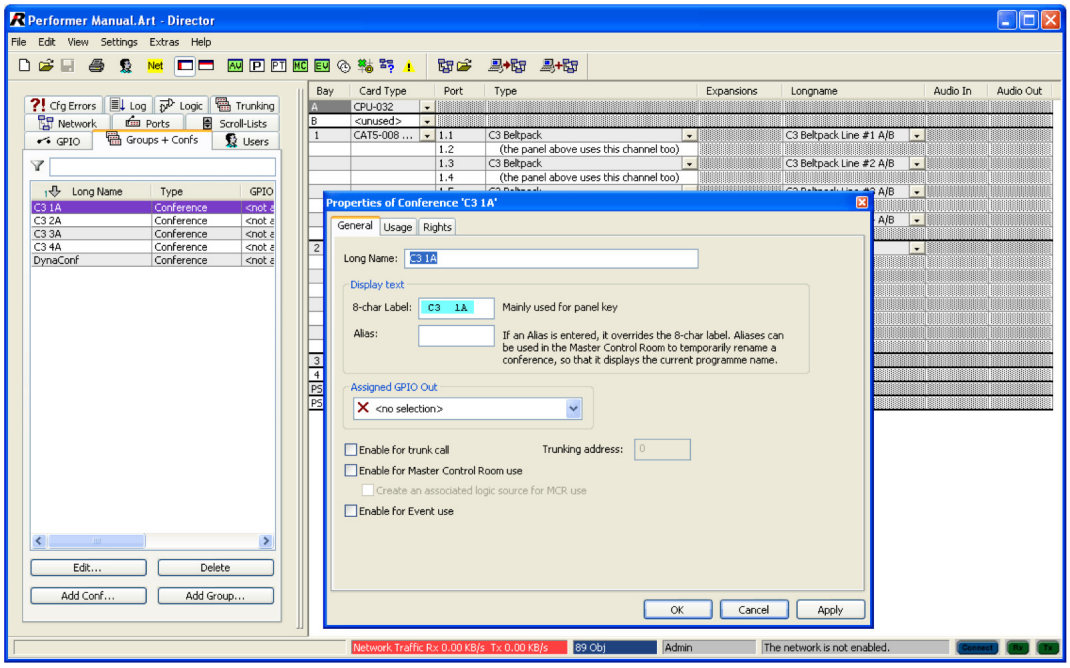
After all partylines are installed to the matrix, reset the node. Click on the menu 'Extras' and select 'Reset All Nodes'.

Note: When you reset the node make sure the intercom is not needed! The reset will take approximately 20 seconds.

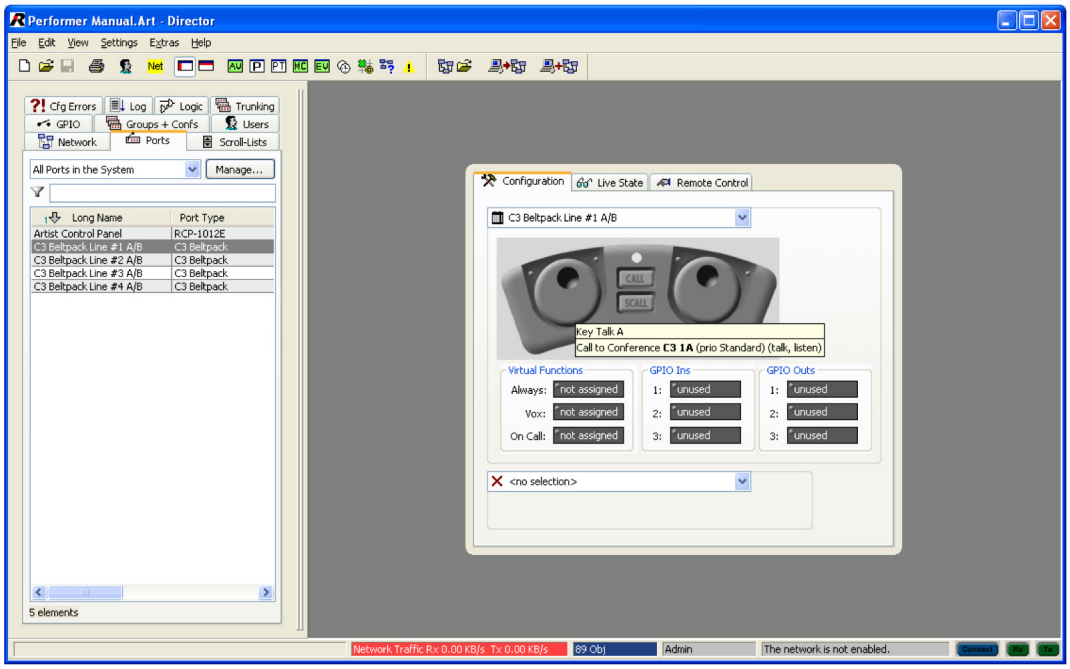
9.2.3 Call to Conference

Open the tab 'Groups + Confs' to program the partyline.

Simply create a conference with the partyline channels and the panels as members. (→ Director Manual - How to create a conference)


Performer Manual.Art - Director
File Edit View Settings Extras Help
Properties of Conference 'C3 1A'
General Usage Rights
Long Name: C3 1A
Display text
8-char Label: C3 1A
Mainly used for panel key
Alias:
If an Alias is entered, it overrides the 8-char label. Aliases can be used in the Master Control Room to temporarily rename a conference, so that it displays the current programme name.
Assigned GPIO Out
<no selection>
Enable for trunk call
Trunking address:
Enable for Master Control Room use
Create an associated logic source for MCR use
Enable for Event use
OK
Cancel
Apply
Edit...
Delete
Add Conf...
Add Group...

Once the conference is created, open the 'Ports' view. Now double click on the partyline line you want to configure (e.g. C3 Beltpack Line #1 A/B). On the right window, a C3 beltpack appears representing the entire partyline.



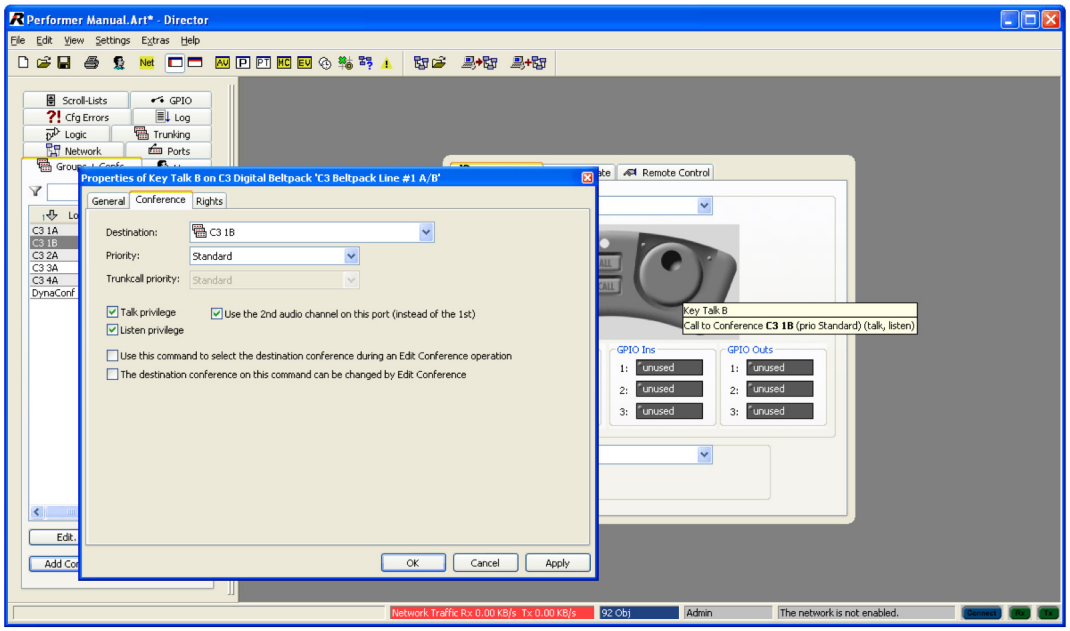
To add a function to the left TALK key channel A (first partyline channel), right click on the left TALK key. Select 'Add function'. Now choose 'Call to Conference' from the menu and select the conference you want to add. On each C3 'TALK' key up to 16 different functions can be stacked. You can also drag the conference from the conference list onto the key.

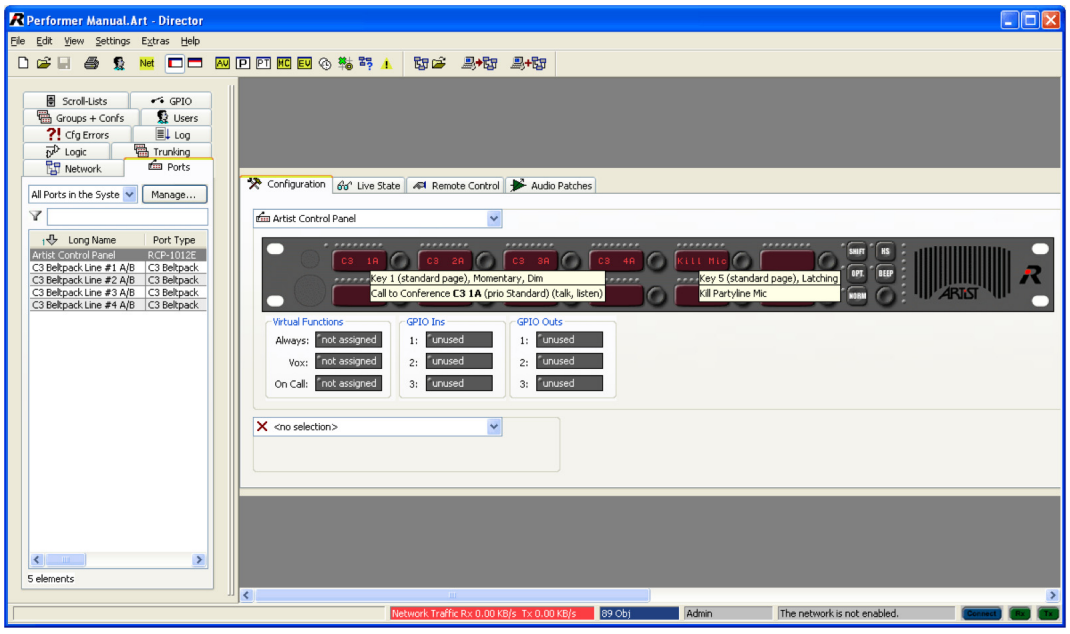
Note: As it is a partyline, remember that all functions added to the partyline will be programmed for ALL users on this particular partyline channel.

To add a function to the right TALK key channel B (second partyline channel), make a right click on the second TALK key and select ‘Add function’. Now choose ‘Call to Conference’ from the menu and select the conference you want to speak to from the partyline.

Check the box ‘Use the 2nd audio channel on this port (instead of the first). This will route the conference to the second partyline channel.

Note: Precondition - The partyline must be configured in two-channel mode!

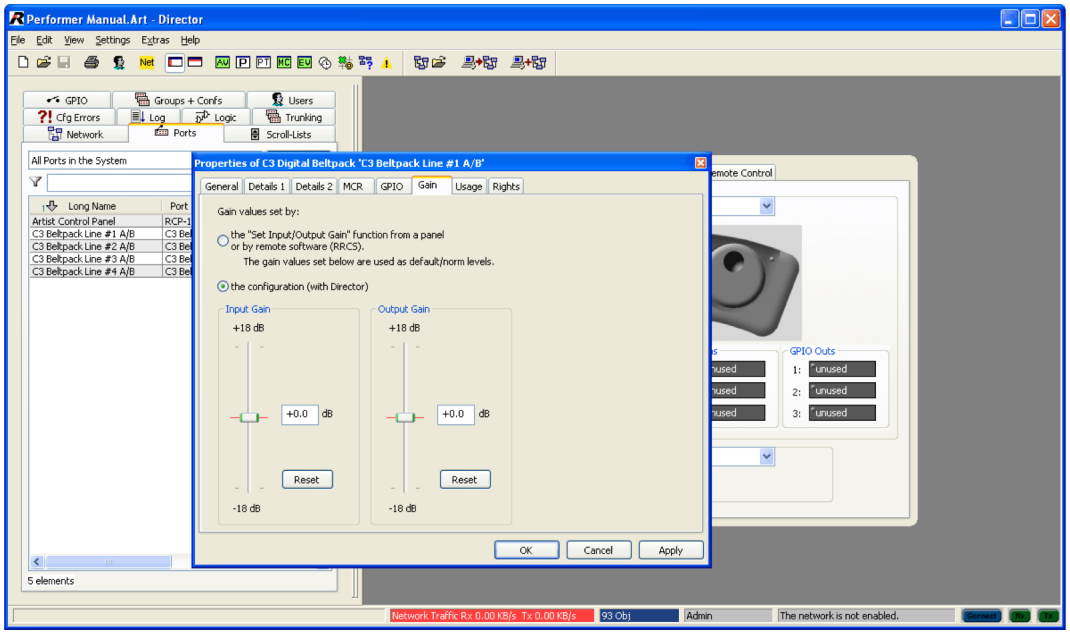




To talk from a panel to the partyline, simply double click in the ‘ports’ view on the panel you want to talk from and add the ‘Conference’ to the panel key.

9.2.4 GAIN Adjustment

In the properties of the partyline the input and output gain of the partyline can be adjusted.



9.3 Integration with 3rd Party Matrix

Integrate your digital Performer partyline with any 3rd party intercom matrix by using the C44 / C44plus system interface.

The C44 / C44plus provides four digital AES CAT-5 connectors (Artist I/O) on the rear and eight analog 4-wire ports on the front corresponding with the four digital 2-channel partyline lines. GPI In/Outs are also available (→ C44 / C44plus GPIO Interface).

9.3.1 Physical Connection

Simply connect the C44 / C44plus system interface with the digital 4-wire AES (Artist I/O) rear ports or the analog 4-wire front ports to the 3rd party matrix.

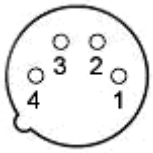
Each C44 / C44plus Artist I/O rear port represents one digital partyline with its two channels. Each C44 analog 4-wire port represents one digital partyline with one channel. Check with your 3rd party manufacturer for the exact cabling of your matrix client card port.

You can also connect the GPIs (In and Out → C44 GPI SUB D Pin Out) with your 3rd party matrix to trigger or read relays for call signalization or the “Kill Mic” function.

Note: If the C44 / C44plus system interface is not connected to an Artist/Performer matrix the DIP switch setting of the cross points is active. (→ C44 / C44plus Program Select via DIP Switch (Front))

10 GENERAL PIN OUTS

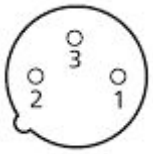
10.1 Headset 4-pole male XLR Connector



3-pole male XLR

Pin	Signal
1	GND / Screen
2	Microphone +
3	Speaker R- / L-
4	Speaker R+ / L+

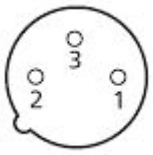
10.2 Digital Partyline 3-pole XLR Connector



3-pole male / female XLR

Pin	Signal
1	GND
2	TX/RX+ , Power+
3	TX/RX - , Power+

10.3 Analog Audio 3-pole male / female XLR Connector



3-pole male / female XLR

Pin	Signal
1	GND
2	Signal+
3	Signal -

11 CABLE SPECIFICATIONS

11.1 3-pole XLR Cable

In order to insure optimal signal transmission, the components of the Performer digital partyline series are calibrated for balanced lines with 110 ohm impedance and 3-pole XLR connectors. Best results are achieved with microphone, AES/EBU or DMX cables that meet these specifications. Using balanced lines with other impedance values can affect the maximum lengths of cable runs.

With 110 ohm cables a range of up to 300m (~900ft) between pieces of equipment is possible. With 50 or 60 ohm cables, the maximum cable range might be less.

Make sure that cables are built using the correct pin assignments in order to avoid disruptions during use.

CAT-5 (FTP) cables are often convenient for fixed installations. In this case, use RJ45 to XLR adapters.

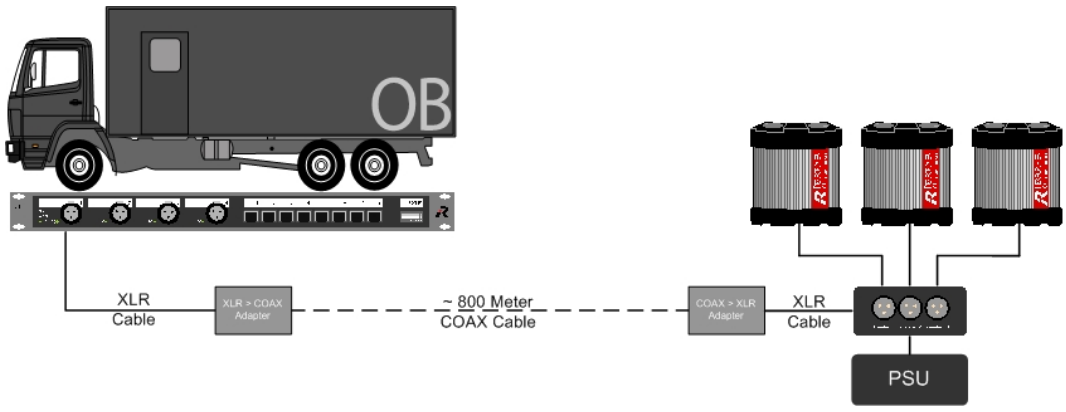
Note: Do not use CAT-5 cross cables or Star Quad cables as the digital partyline will not work properly with these types of cables!

For further information on cables, please contact your local dealer or Riedel Service.

11.2 COAX Cable

In certain situations it might be more convenient to send the whole digital partyline signal over a single COAX cable instead of a 3-pole XLR cable.

OB Vans, who often run only one COAX multi core cable to the site can now transmit the digital partyline communication over a single COAX cable. The COAX cable's length can be up to 800 Meters (~2600ft).



Simply add the Neutrik 3-pole female XLR → COAX adapter (NADITBNC-FX) at the beginning side and the COAX → 3-pole male XLR adapter (NADITBNC-MX) at the end of the COAX cable. *Note: As the partyline power is not transmitted over the COAX cable, add directly after the second adapter a device (e.g. C31 + PSU), that will power the partyline again.*

12 TROUBLESHOOTING

Problem	Cause	Solution
C3 / CW-2 Error LED flickers.	A defective cable or the maximum cable length has been exceeded.	Check cable. Check cable length.
Device does not start.	A defective cable or the maximum cable length has been exceeded. Too little voltage on the line.	Check cable. Check cable length. Check power.
Crackles and static on the partyline.	A defective cable or the maximum cable length has been exceeded. Too little voltage on the line.	Check cable. Check cable length. Check power.
Audio is not loud enough in the headset.	Wrong microphone configuration for headset (dynamic/electret microphone).	Check what kind of microphone you are using (dynamic/electret) and set the DIP switch on the C3 beltpack to the correct value.
No audio signal is present on the analog audio I/Os of the C44 in stand-alone mode.	Incorrect DIP switch settings.	Check DIP switch settings (see Chapter 5).

Problem	Cause	Solution
No audio signal from the intercom matrix to the partyline.	Incorrect configuration of the intercom matrix.	Check configuration of the intercom system (Director). Check the cable from the matrix to the partyline.
The partyline is set-up correctly and connected to the matrix but the partyline does not start.	Incorrect firmware in the matrix.	Please check the firmware and contact Riedel Customer Service.
The C3 cannot talk on the partyline.	DIP switches 3 and 4 are in the ON position. With this setting of the DIP switches the partyline cannot be spoken on.	Check DIP switches 3 and 4. Turn OFF if necessary.
The C3 cannot talk or listen.	DIP switch 8 is in the ON position. The beltpack is in side tone mode.	Check DIP switch 8 and turn OFF if necessary.

13 SERVICE

If you have any further questions, we offer comprehensive customer service options for this product including:

- Telephone service
- E-mail service
- Fax service
- Configuration support
- Trainings
- Repairs

Your primary point of contact for any service issues is your local dealer.

In addition, Riedel Customer Service in Wuppertal, Germany is also available to assist you.

Telephone: +49 (0) 202 292 9400

(Monday - Friday, 8am – 5pm, Central European Time)

Fax: +49 (0) 202 292 9419

Or use the contact form on our webpage:

www.riedel.net

For repairs, please contact your local dealer. Your dealer will be able to help process your repair as fast as possible and/or arrange for the delivery of spare parts.

The address for repairs sent directly to Riedel Communications GmbH is:

Riedel Communications GmbH

- Repairs -

Uellendahler Str. 353

D-42109 Wuppertal

Germany

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